SONY

3-856-159-11(1)

FM Stereo FM-AM Receiver

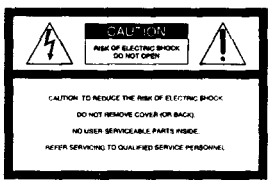
Operating Instructions

STR-GA9ESG

© 1996 by Sony Corporation

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's
enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

CAUTION

You are cautioned that any change or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note to CATV system installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Note on the remote commander:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION

Use of this appliance with some systems may present a shock or fire hazard. Do not use with any units which have the following marking located near output.
WARNING: HAZARDOUS ENERGY !

Owner's record

The model and serial numbers are located on the rear of the unit. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. STR-GA9ESG
Serial No. _____

For the customers in Canada

CAUTION

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

This class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Precautions

On safety

- Should any solid object or liquid fall into the cabinet, unplug the receiver and have it checked by qualified personnel before operating it any further.

On power sources

- Before operating the receiver, check that the operating voltage is identical with your local power supply. The operating voltage is indicated on the nameplate at the rear of the receiver.
- This unit is not disconnected from the AC power source as long as it is connected to the wall outlet, even if the unit itself has been turned off.
- If you are not going to use the receiver for a long time, be sure to disconnect the receiver from the wall outlet. To disconnect the AC power cord, grasp the plug itself; never pull the cord.
- One blade of the plug is wider than the other for the purpose of safety and will fit into the wall outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- AC power cord must be changed only at the qualified service shop.

On placement

- Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.
- Place the receiver in a location with adequate ventilation to prevent heat buildup and prolong the life of the receiver.
- Do not place the receiver near heat sources, or in a place subject to direct sunlight, excessive dust or mechanical shock.
- Do not place anything on top of the cabinet that might block the ventilation holes and cause malfunctions.

On operation

- Before connecting other components, be sure to turn off and unplug the receiver.

On cleaning

- Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

For the customers in the USA
For detailed safety precautions, see the "IMPORTANT SAFEGUARDS" leaflet.

If you have any question or problem concerning your receiver, please consult your nearest Sony dealer.

About This Manual

The instructions in this manual are for model STR-GA9ESG.

The following icon is used in this manual:

Indicates hints and tips for making the task easier.

The instructions in this manual mainly describe how to operate the receiver by using the supplied remote to manipulate the on-screen display on your TV screen.
For explanations of how to operate the receiver using the controls on its front panel, refer to the chapter titled "Using the Controls on the Front Panel".

This receiver incorporates the Dolby Pro Logic Surround system.
Manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby," the double-D symbol ⧫⧫, "AC-3" and "Pro Logic" are trademarks of Dolby Laboratories Licensing Corporation.

TABLE OF CONTENTS

Introduction
Features 4
Understanding How the Receiver Works 6

Getting Started
Unpacking 7
Hookup Overview 7
RC Antenna Hookups 8
IR Repeater Hookups 8
Antenna Hookups 9
Audio Component Hookups 9
Speaker System Hookups 10
TV/VCR Hookups 12
AC Hookups 13
Before You Use Your Receiver 13

Preparing and Using the Remote
Inserting Batteries into the Remote 14
Preventing Interference Between Multiple Remotes 14
How to Use the Remote 15
Registering a TV or Monitor 16
Registering Audio/Video Equipment 18
Programming Infrared (IR) codes from other remotes (USER IR setting) 21

Basic Operations
Selecting a Component 23
Tuning and Presetting Radio Stations 25
Recording 27
Using the Sleep Timer 28

Using Sound Fields
Introduction 29
Using Pre-programmed Sound Fields 29
Getting the Most Out of Dolby Pro Logic Surround Sound 31
Taking Advantage of the Sound Fields 33
Customizing the Sound Fields 33

Advanced Operations
Using the Index functions 36
Operating a CD Changer 38
Enjoying Two Components at the Same Time 39
Operating Several Components in Sequence Automatically (macro play) 40

Settings and Adjustments
Remote Operation of Audio Sources Without the TV (illuminated control flasher) 41
Playing Sources Automatically (auto play) 42
Starting a Source Automatically at Power On (auto start) 42
Adjusting the Sensitivity of the Remote 43
Selecting the Display Parameters 43
Adjusting the Position of the On-Screen Display 44

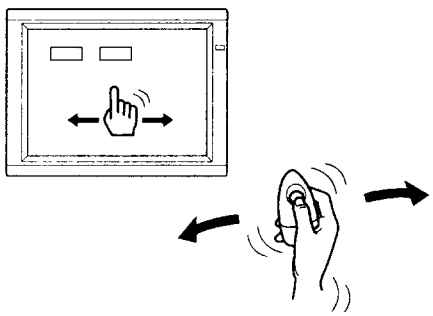
Using the Controls on the Front Panel
Front Panel Descriptions 45
Selecting a Component 46
Receiving Broadcasts 46
Recording 47
Using Sound Fields 48
Indexing 49
Enjoying Two Components at the Same Time 50

Additional Information
Rear Panel Descriptions 51
Troubleshooting 52
Specifications 54
Glossary 55
Index 57

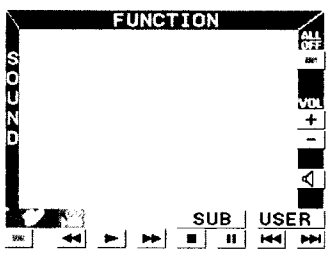
Features

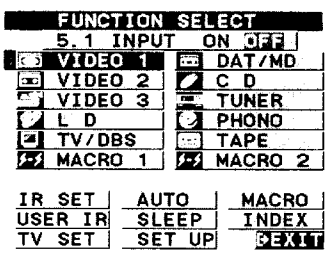
On-screen control of Audio/Video components

The STR-GA9ESG FM Stereo/FM-AM receiver is an audio/video control center with a unique interface. By connecting the receiver to your TV, an on-screen display appears and lets you operate the various connected audio/video components. Use the remote to move the pointer (hand-shaped icon) on the on-screen display and select functions.



This unit's on-screen display lets you control audio/video components as well as any other device that can be controlled by an infrared remote control, such as lighting fixtures.
For details on how the receiver controls other equipment, see page 6.

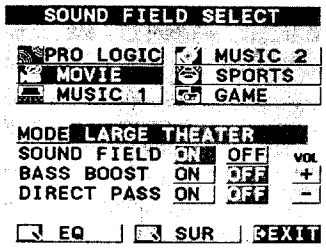


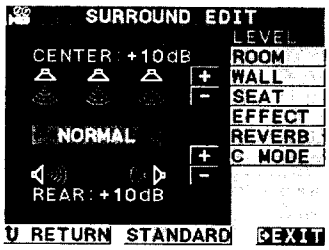


A wide variety of sound fields including Dolby Pro Logic surround

Since the receiver comes preset with 24 different sound fields (like HALL, THEATER, ARENA, etc.), you can enjoy exciting sound effects simply by choosing one from the SOUND FIELD SELECT screen.

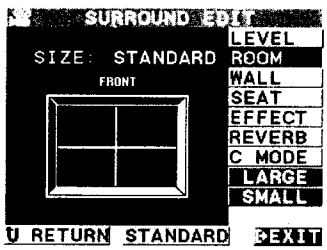
The receiver also incorporates a Dolby Pro Logic decoder, so you can enjoy programs recorded in Dolby Surround with a surround effect similar to a movie theater.

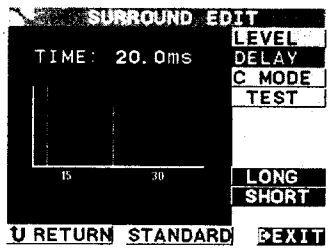




DSP functions that let you customize the sound fields to produce the effect you desire

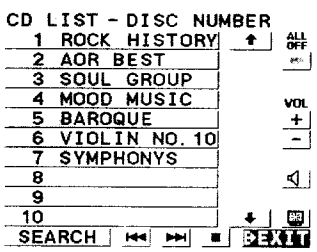
Digital sound processing lets you control a variety of sound elements to produce custom listening environments based on the preset sound fields.





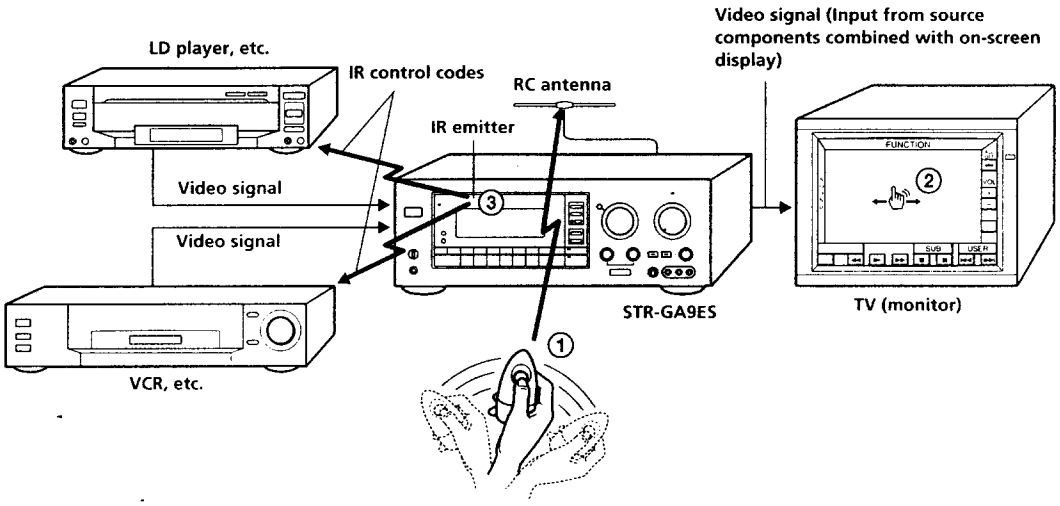
CD Changer Control

Connecting a Sony CD changer equipped with a Control A1 terminal allows you to access and display the disc information stored in the CD changer in alphabetical order, numerical order, or by group name. You can also select the disc to be played discs from the on-screen display using the receiver's remote.



Understanding How the Receiver Works

Before you can use the remote to control the receiver, you must connect the remote control (RC) antenna as shown below.
Steel beams within walls and other metallic objects may interfere with signal reception by the RC antenna. To prevent this, keep the RC antenna at least 20 inches (about 50 cm) away from all metallic objects.
Since this receiver uses menu operations, you must connect a TV.



On-screen operation

1 The remote commander emits a constant radio frequency (RF) signal that conveys any movement of the remote commander to the receiver via the RC antenna (① above).

2 This controls the movement of the pointer (hand icon) in the on-screen display (② above).

3 When you move the pointer to an on-screen icon, and press the button on the remote, the infrared (IR) emitter transmits the corresponding IR control code to the respective program source (③ above).

If the screen flickers or the pointer does not move

The RF signal from the remote is being obstructed and is not reaching the RC antenna (① above). Reposition the RC antenna or bring the remote commander closer to the RC antenna.

If the program source fails to respond or is slow to respond

The IR control code from the IR repeater is not fully reaching the infrared receptor on the program source. Connect the extra IR repeater (supplied) and position it facing the program source (see "IR Repeater Hookups" on page 8).

If some of the programmed on-screen controls are unresponsive or slow, rerecord the IR codes for those buttons (see "Registering non-Sony audio/video equipment" on page 18).

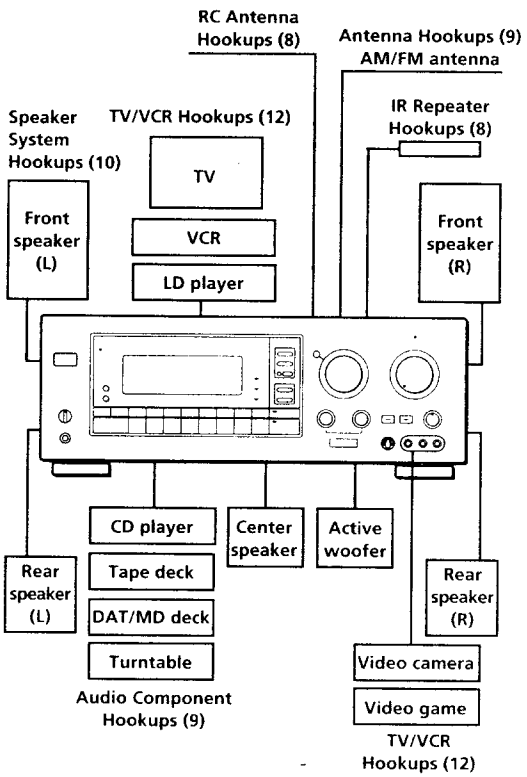
Unpacking

Check that you received the following items with the receiver:

- FM wire antenna (1)
- AM loop antenna (1)
- Remote commander RM-VP1 (remote) (1)
- Size AA (R6) batteries (2)
- Remote control (RC) antenna (1)
- IR repeater (1)
- Getting Started and Basic Operation Guide (1)

Hookup Overview

The receiver allows you to connect and control the following audio/video components. Follow the hookup procedures for the components that you want to connect to the receiver on the pages specified. To learn the locations and names of each jack, see "Rear Panel Descriptions" on page 51.



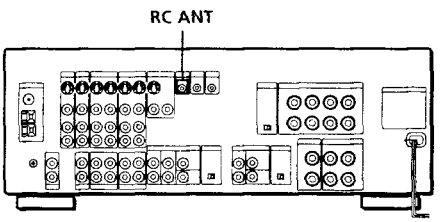
Before you get started

- Turn off the power to all components before making any connections.
- Do not connect the AC power cords until all of the connections are completed.
- Be sure to make connections firmly to avoid hum and noise.
- When connecting an audio/video cable, be sure to match the color-coded pins to the appropriate jacks on the components: Yellow (video) to Yellow; White (left, audio) to White; and Red (right, audio) to Red.

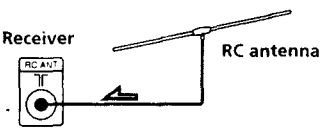
RC Antenna Hookups

Overview

This section describes how to connect the supplied RC antenna to the receiver. Since the remote controls the unit using radio frequency (RF) signals, you must connect the remote control (RC) antenna to the unit before you can use the remote commander.
For the specific location of the terminal, see the illustration below.

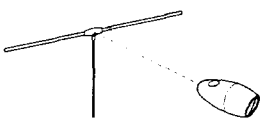


Hookups



To maximize RF signal transmission efficiency:

- Position the RC antenna perpendicular to the signal path of the remote (see below).

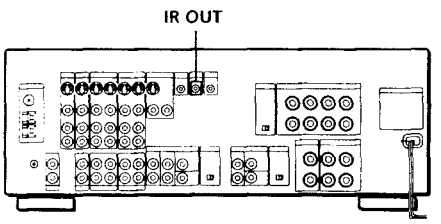


- Operate the remote within about 24 feet (about 7 m) of the RC antenna.
  If you have difficulty operating the on-screen display within this range, reposition the RC antenna for better reception.
- Keep the RC antenna at least 20 inches (about 50 cm) away from metallic objects.

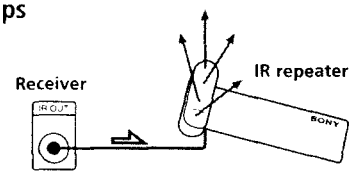
IR Repeater Hookups

Overview

This section describes how to connect the supplied extra infrared (IR) repeater to the receiver. The repeater emits infrared signals corresponding to those emitted by the remote controls supplied with the respective components. Connected this repeater to obtain additional coverage if you experience difficulty controlling a certain component using the receiver's on screen display (OSD) control functions, or your installation prevents the repeater on the front panel from reaching all of the equipment you need to control.
For the specific location of the terminal, see the illustration below.



Hookups



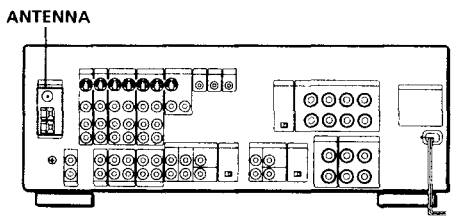
Notes

- Use the supplied adhesive tape to secure the IR repeater so that its front faces the equipment to be controlled.
- If you experience trouble controlling the connected equipment, the infrared (IR) signals transmitted from the repeater may not be reaching the infrared receptor on the respective equipment. In such a case, reposition the IR repeater closer to that piece of equipment.

Antenna Hookups

Overview

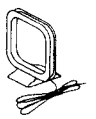
This section describes how to connect AM and FM antennas to the receiver. If you want to receive radio broadcasts with the receiver, complete these connections first, then go to the following pages. For specific locations of the terminals, see the illustration below.



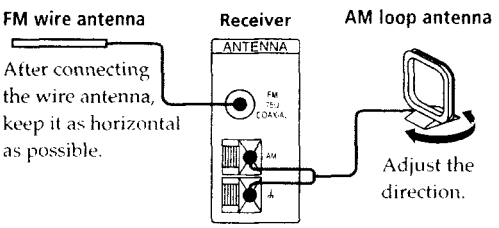
What antennas will I need?

- FM wire antenna (supplied) (1)

- AM loop antenna (supplied) (1)



Hookups

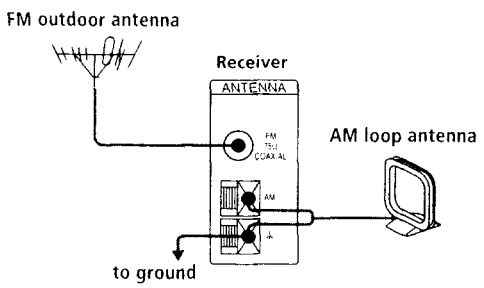


If AM reception is poor

We recommend that you purchase and connect the optional Sony antenna to the unit if reception is weakened by ferroconcrete used in the construction of your apartment or building.

If you have poor FM reception

Connect a 75-ohm coaxial cable (not supplied) to an FM outdoor antenna.



Note

To prevent noise pickup, keep the AM loop antenna away from the unit and TV set.

Connecting a ground wire

To prevent hum, connect a ground wire (not supplied) to the ⏚ ground terminal. If you've connected an outdoor antenna, be sure to connect the ground for lightning protection.

Note

The ⏚ SIGNAL GND should not be used for this connection.

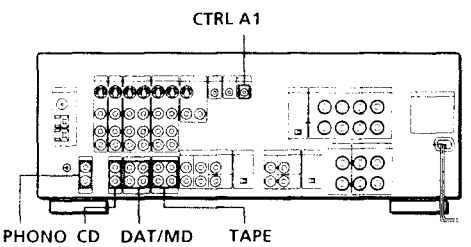
Where do I go next?

If you want to connect other components, go on to the next section. If you're only planning to use the receiver to listen to the radio, go to "Speaker System Hookups" starting on page 10.

Audio Component Hookups

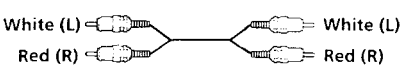
Overview

This section describes how to connect your audio components to the receiver. If you want to use the receiver as an amplifier, complete these connections. For specific locations of the jacks, see the illustration below.



What cords will I need?

Audio cords (not supplied) (1 for each CD player and turntable; 2 for each tape deck, DAT deck, or MD deck)

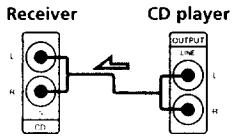


(continued)

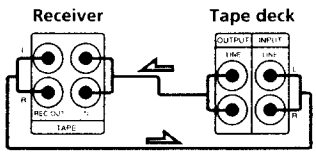
Hookups

The arrow ⟹ indicates signal flow.

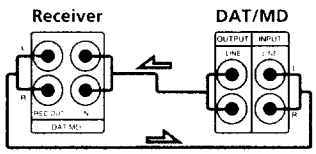
CD player



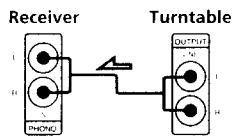
Tape deck



DAT/MD



Turntable



- **If your turntable has an earth lead**
  To prevent hum, connect the earth lead to the ⏚ SIGNAL GND terminal on the receiver.

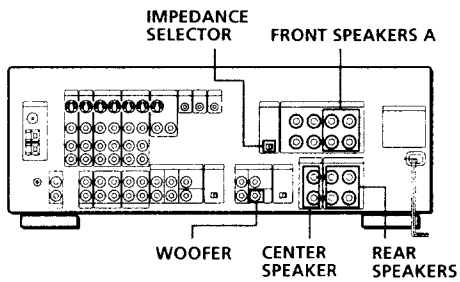
CONTROL A1 Hookups

- **If you have a CONTROL A1 compatible Sony CD player or tape deck**
  Use a CONTROL A1 cord (not supplied) to connect the CTRL A1 jack on the CD player or tape deck to the S-LINK CTRL A1 jack on the receiver. Refer the separate manual "CONTROL-A1 Control System" and the Operating Instructions supplied with your CD player or tape deck for details.
- **If you have a Sony CD changer with a COMMAND MODE selector**
  If the CD changer's COMMAND MODE selector can be switched between CD 1, CD 2, and CD 3, be sure to set the command mode to "CD 1" and connect the changer to the CD terminals on the receiver.
  However, if you have a Sony CD changer with VIDEO OUT terminals, set the command mode to "CD 2" and connect the changer to a set of the receiver's video component terminals (VIDEO 1, VIDEO 2, or LD).

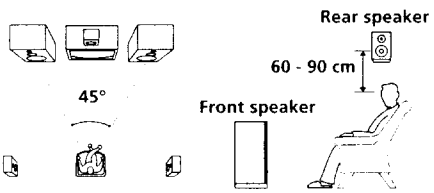
Speaker System Hookups

Overview

This section describes how to connect your speakers to the receiver. Although front (left and right) speakers are required, center and rear speakers are optional. Adding center and rear speakers will enhance the surround effects. Connecting an active woofer will increase bass response.
For specific locations of the terminals, see the illustration below.

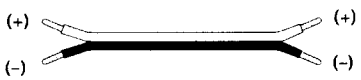


For optimum surround sound effect, place your speakers as shown below.



What cords will I need?

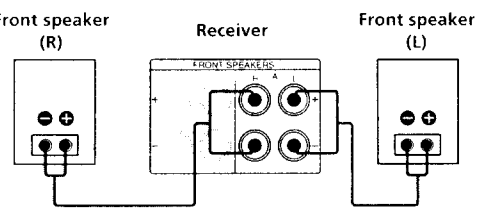
Speaker cord (not supplied) (1 for each speaker)



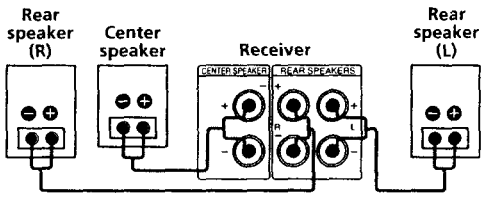
Twist the stripped ends of the cord about 2/3 inch (15 mm). Be sure to match the speaker cord to the appropriate terminal on the components: + to + and – to –. If the cords are reversed, the sound will be distorted and will lack bass.

Hookups

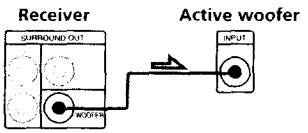
Front speakers



Rear and center speakers

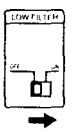


Active woofer



Note

Set the LOW FILTER switch to ON when you connect an active woofer. This cuts low frequency output from the front speakers so you can enjoy pure bass from the active woofer.



If your TV monitor uses separate speakers

You can connect one of them to the SURROUND OUT CENTER terminal for use with Dolby Pro Logic Surround Sound (see page 31).

Selecting the impedance

Set the IMPEDANCE SELECTOR for the front and center speakers as indicated in the table below. Check the instruction manual of your speakers if you're not sure of the impedance. (This information is usually printed on a label on the back of the speaker.)

if nominal impedance of your speaker is	Set IMPEDANCE SELECTOR to
Between 4 and 8 ohms	4 Ω
8 ohms or higher	8 Ω

Selecting the speaker system

If you connect only one set of front speakers, set the SPEAKERS selector on the front panel to A. If you connect two sets of front speakers, see the following:

To drive	Set SPEAKERS selector to
Speaker system A (connected to the FRONT SPEAKERS A terminals)	A
Speaker system B (connected to the FRONT SPEAKERS B terminals)	B
Both speaker systems A and B (parallel connection)	A+B*

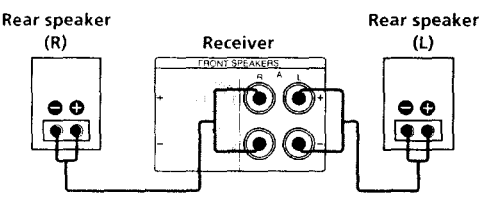
* Connect speakers with nominal impedances of 8 ohms, or higher, to the A and B terminals.

For even more powerful amplification

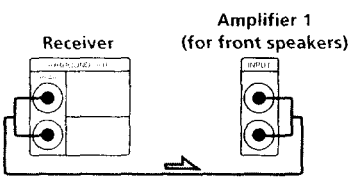
You can use the POWER SWAP function to connect two additional amplifiers.

1 Unplug the power cord.

2 Connect the rear speakers to the FRONT SPEAKERS terminals on this receiver.
The rear signals are output from the FRONT SPEAKERS terminals.

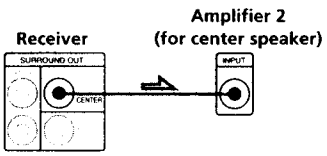


3 Connect the first amplifier to the SURROUND OUT REAR, and connect the front speakers to this amplifier.
The front signals are output from the SURROUND OUT REAR terminals.

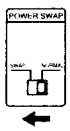


(continued)

4 Connect the second amplifier to SURROUND OUT CENTER, and connect the center speaker to this amplifier.
The center signal is output from the SURROUND OUT CENTER terminal.



5 Remove the cover on the POWER SWAP selector and set the selector to the SWAP position.
After you have completed the setting, reattach the cover to the selector and plug in the power cord.



To adjust the volume

Set the volume control of the separate amplifiers to the maximum position and adjust the volume level with the volume control of the receiver.

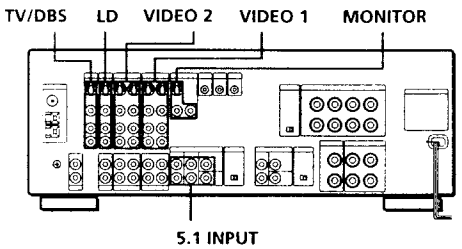
Notes

- For best results, we recommend using a pair of equivalent amplifiers to boost front and center speaker output. You can, however, connect the center speakers to the CENTER SPEAKER terminals if you only have one additional amplifier.
- Do not use the terminals labeled CENTER SPEAKER or REAR SPEAKERS if you connect two additional amplifiers. Make connections as shown above.
- If you want to turn off the power swap function, set the POWER SWAP selector to the NORMAL position.

TV/VCR Hookups

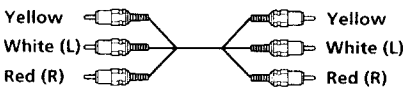
Overview

This section describes how to connect video components to the receiver.
For specific locations of the jacks, see the illustration below.

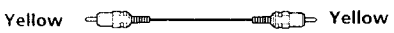


What cables will I need?

- Audio/video cable (not supplied) (1 for each TV or LD player; 2 for each VCR)



- Video cable (not supplied) (1 for a TV monitor)

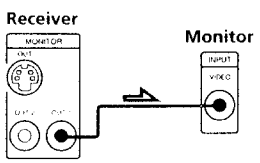


Hookups

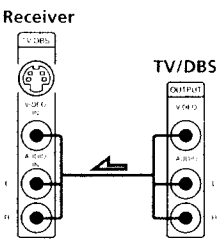
The arrow ⇨ indicates signal flow.

Monitor

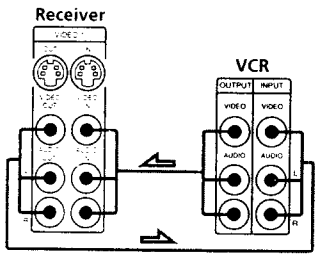
If you are using your TV as a monitor, do not connect anything to the TV/DBS IN jacks, unless you have a Sony TV with TV OUT jacks (see page 24 for details).



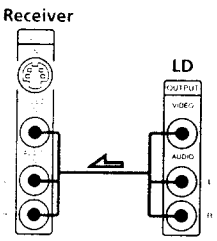
TV tuner or DBS (Digital Broadcasting Satellites) receiver



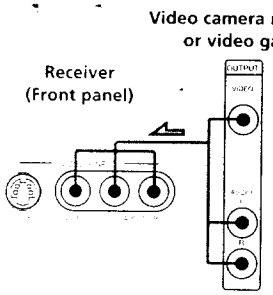
VCR (via the VIDEO 1 jacks)
If you have two VCRs connect the second one to the VIDEO 2 jacks. If one of them has a StarSight tuner, be sure to connect that one to the VIDEO 1 jacks.



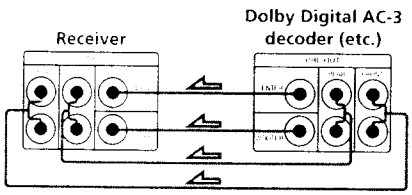
LD player



Video camera recorder/Video game
Use the (VIDEO 3) input jacks on the front panel.



You can play decoded Dolby Digital AC-3 soundtracks through the speakers connected to the receiver.
If you have a Dolby Digital AC-3 decoder you can use the receiver to amplify a decoded Dolby Digital AC-3 soundtrack with the following connections (see pages 23 and 46 for details regarding operation).



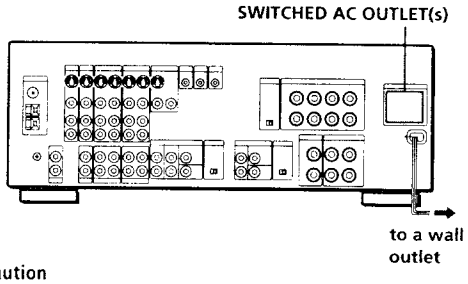
Where do I go next?

Go on to the next section to connect the AC power cord and complete your home theater system.

AC Hookups

Connecting the AC power cord

Connect the AC power cord from this receiver and from your audio/video components to a wall outlet. If you connect other audio components to the SWITCHED AC OUTLET(s) on the receiver, the receiver can supply power to the connected components so you can turn on/off whole system when you turn on/off the receiver.



Caution
Make sure that the power consumption of the component(s) connected to the receiver's AC outlet(s) does not exceed the wattage indicated on the rear panel. Do not connect high-wattage electrical home appliances such as electric irons, fans, or TVs to this outlet.

Where do I go next?

Before you use the receiver, go to the next section to make sure that all the controls are set to the appropriate positions.

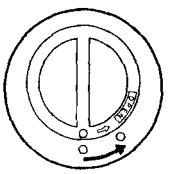
Before You Use Your Receiver

Before you start using your receiver, make sure that you have:

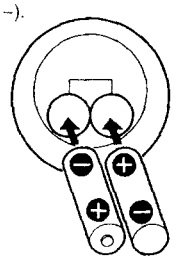
- Turned MASTER VOL to the leftmost position (0).
- Selected the appropriate speaker system. (For details, see "Selecting the speaker system" on page 11.)
- Set BALANCE to the center position.

Inserting Batteries Into the Remote

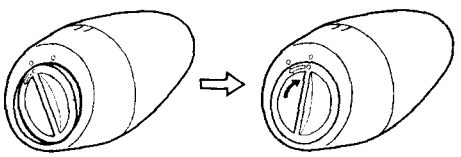
1 Open the cover on the bottom of the remote.



2 Insert two size -AA (R6) batteries with correct polarity (+/–).



3 Close the cover by holding it down (it will be a little uneven) and turning it to the right. The cover locks



After inserting the batteries into the remote
Place it undisturbed on a flat surface for about 10 seconds to allow the internal circuitry to calibrate.

To avoid damage caused by battery leakage and corrosion
Remove the batteries when the commander will not be used for a long time.

Battery life

- Normal operation can be expected about three months using Sony SUM-3 (NS), and a half year using Sony AM-3 (NW) alkaline batteries. Since the remote consumes power whenever you pick it up and an on-screen display appears, the service life of the batteries may be less than three months, depending on how much you handle the remote.
- When the batteries become weak, LOW will appear on the display during the initial on-screen displays (but possibly not at the deeper menu levels). When EMPTY appears, the batteries are almost completely drained and will soon need to be replaced.

Preventing Interference Between Multiple Remotes

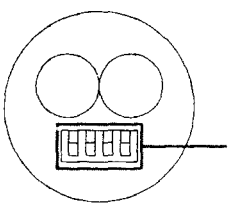
If you use two or more receivers at the same time, interference may occur between the RF signals, causing the units to operate erratically. You can prevent this by giving all units a unique security number which distinguishes the signal of each unit from the others. Follow the procedure below to assign a security number to each unit.

1 Turn off the power to the unit.

2 Turn on the unit again while simultaneously holding down the (FUNCTION) MODE and EQ BAND buttons on the front panel. "SECURITY No." appears in the display. Enter a number from 0 to 15 by pressing (FUNCTION) MODE or EQ BAND on the front panel. Make sure that the number is different from the security code of the other units.

3 After a few seconds, "SECURITY OK!" appears, indicating that the code has been recorded.

4 Enter the same security number into the remote. To do this, open the battery compartment and remove the batteries. You will see a set of yellow switches as shown below.



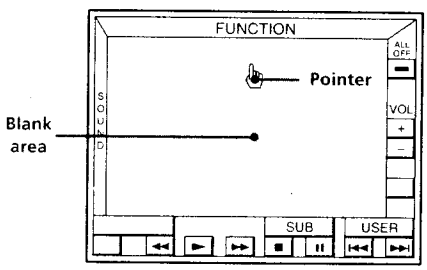
Use the tip of a pen or some other pointed object to flip up the appropriate switches for each digit of the security number (refer to the chart on the following page). Note that all switches are down for zero, and all switches are up for fifteen.

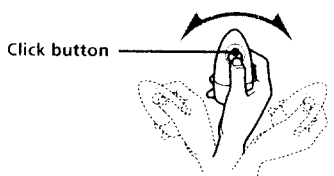
5 Reinsert the batteries and place the remote on a flat surface for about 10 seconds.

SECURITY NO.	Remote commander	SECURITY NO.	Remote commander
0		8	
1		9	
2		10	
3		11	
4		12	
5		13	
6		14	
7		15	

How to Use the Remote

The supplied remote lets you perform almost all of the receiver operations. Operation is simple, just move the remote in the direction you want to move the pointer (hand shaped icon) on the on-screen display. Position the pointer so that the finger tip is positioned on one of the on-screen items, then press and quickly release the button on the remote to "click" the item.





To turn on the receiver

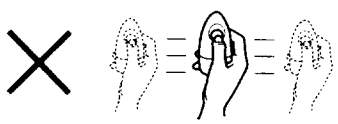
Press the click button on the remote once or twice to turn on the unit.

If the on-screen display does not appear even after the batteries have been inserted into the remote (see page 14), reinsert the batteries and place the remote on a flat surface for about 10 seconds.

Hints on handling the remote

- A slight wrist movement is all you need to direct the pointer. (See previous illustration.)
- Hold the remote with its "click" button facing up, as shown below. If the click button is oriented diagonally, the pointer will not move in the same direction that you move the remote.

- The pointer will not move if you move the remote along a flat plane as shown below.



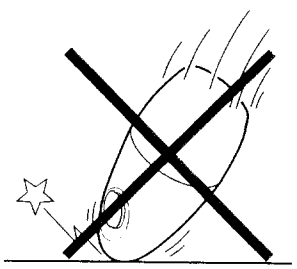
- The on-screen display disappears automatically after a few seconds when you place the remote on a flat surface.
  To make the on-screen display disappear faster, position the pointer in the blank area, hold down the click button to vanish the display, then place the remote on a flat surface and release the click button.
  To recall the on-screen display, pick up the remote.

Notes

- The position of the pointer freezes when you hold down the click button.
- If the pointer begins drifting on the screen even while the remote is stationary, place the remote on a flat surface until the on-screen display disappears. The pointer should behave normally the next time you use the remote.
- If your hand is very dry, the on-screen display may not appear when you touch the click button. In this case, press the click button.

Caution

Since the remote contains delicate circuitry and parts, do not subject it to sudden changes in temperatures or to shock.



Registering a TV or Monitor

Registering a Sony TV or monitor

If your Sony TV can be controlled by an infrared remote, and it is connected to the receiver by it's VIDEO 1 video input jack, IR code registration is unnecessary.

The following cases require registration of a Sony TV

- If your Sony TV is connected via a different video input jack (such as VIDEO 2).
  To ensure proper operation, follow steps 1 to 3 below, click VIDEO 1 2 3 to specify the correct video input in step 4, then click RETURN or EXIT.
- If you are using a wide Sony TV.
  To ensure proper operation, follow steps 1 to 3, click WIDE in step 4, then click RETURN or EXIT.

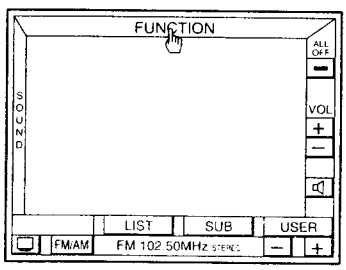
Registering a non-Sony TV or monitor

Complete the following procedure to set the receiver to turn on your TV or monitor automatically whenever you turn on the receiver.

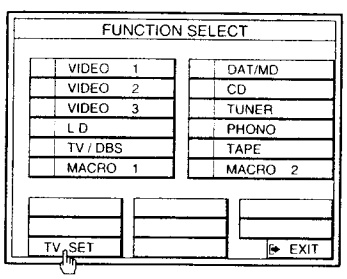
Registration

1 Turn on the receiver and the TV set.
Make sure the input selector on the TV set is set to the video input.

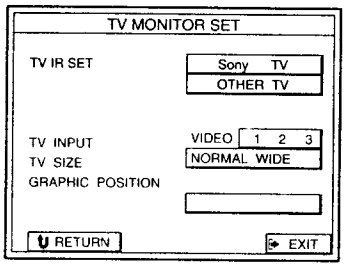
2 Click FUNCTION in the main menu.



3 Click TV SET.



4 Click OTHER TV (or click "Sony TV" for a Sony TV).



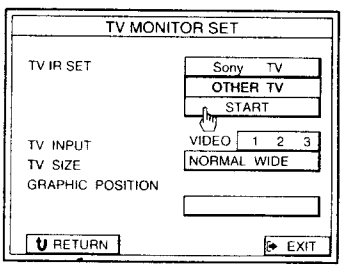
If you connected the receiver to the VIDEO 2, or 3 jacks on your TV or monitor
Click VIDEO 1 2 3 to specify the correct video input.

If you are using a wide TV
Click WIDE to specify WIDE.

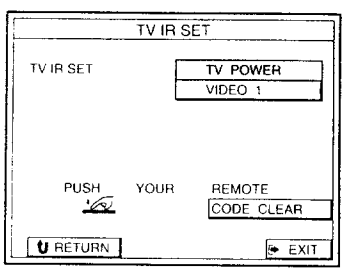
If you are using a Sony TV
The IR codes are programed automatically and registration is complete (click RETURN or EXIT).

Before going to step 5, cover the IR sensor on the TV to prevent accidental operation. Otherwise, the on-screen display may be turned off during the programing procedure.

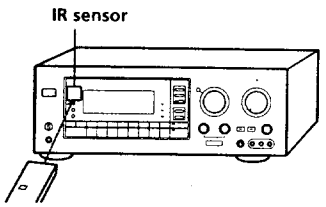
5 Click START.



6 When "PUSH YOUR REMOTE" appears on the TV screen, press the button on the TV's remote that corresponds to the highlighted control button (e.g., POWER).



When programing the IR code, point the remote at the IR sensor on the receiver from a distance no greater than 4 inches (10 cm) and hold down the button on the remote for about 5 seconds until the instruction "RELEASE YOUR REMOTE" appears.



Keep the remote pointed horizontally at the IR sensor until the code is programed.
If you tilt or move the remote during the programing process, the IR code may not be programed correctly.

7 Repeat this procedure for the remaining buttons that appear on the TV screen. If an IR code was not programed correctly, "NG" is displayed.

If your TV set's remote has an independent input selector button (e.g., VIDEO 1)
Program the IR code of this button when the VIDEO 1 button appears. When you turn on the receiver, the TV switches to the video input automatically.

If your TV set does not have an independent input selector button or has a cyclic input selector button
Click EXIT to return to the main menu.
The TV's input can not be switched automatically when you turn on the receiver. Switch the TV to the video input manually. If you programed an IR code for the VIDEO 1 button, follow the instructions in "To erase a specific IR code" below to erase the VIDEO 1 code.

To exit to the main menu
Click EXIT.

To return to a previous menu
Click RETURN.

To erase TV IR codes
Click CODE CLEAR.
- To erase a specific IR code
  1 Click SINGLE IR CODE CLEAR.
  2 Click the button you want to clear.
    "Are you sure?" appears for confirmation.
  3 Click YES to erase the code.
    "CODE CLEAR!" appears in the display.
    To stop before erasing a code, click NO.
  To erase another code repeat steps 2 and 3.
- To erase all the TV IR codes
  1 Click TV IR CODE CLEAR.
    "Are you sure?" appears for confirmation.
  2 Click YES to erase the codes.
    "CODE CLEAR!" appears in the display. To stop before erasing the codes, click NO.
- To erase all the IR codes.
  1 Click ALL IR CODE CLEAR.
    "Are you sure?" appears for confirmation.
  2 Click YES to erase the codes.
    "CODE CLEAR!" appears in the display. To stop before erasing all the codes, click NO.

Note
Some IR codes may not have been successfully programed, even if "RELEASE YOUR REMOTE" appears on the TV screen. In this case, try programing the IR code again. If the IR code still cannot be programed, follow the procedure described in "Programming Other Infrared (IR) Codes (USER IR setting)" on page 21.

To change from another manufacturer's TV set to a Sony TV set
Connect the receiver's MONITOR OUT jack to the VIDEO 1 input jack of the Sony TV set. Follow steps 1 to 3, then click SONY TV in step 4. Click VIDEO 1 2 3 and/or WIDE to specify VIDEO 1 and/or WIDE if necessary. Then click RETURN or EXIT.

Registering Audio/Video Equipment

Registering Sony audio/video equipment

If your Sony audio and video equipment can be controlled by an infrared remote, simply connect them to the jacks shown on the following table, registration is unnecessary.

Receiver jacks	Equipment to be connected
VIDEO 1	Sony VTR 3 (VHS)
VIDEO 2	Sony VTR 1 (BETA)
VIDEO 3	Sony VTR 2 (8 mm)
LD	Sony LD player
TV/DBS	Sony DBS receiver
DAT/MD	Sony DAT deck
CD	Sony CD player (CD 1)
TAPE	Sony Tape deck
MONITOR	Sony TV (via its VIDEO 1 jack)

The following cases require registration of Sony products

- When connecting a Sony MD deck to the DAT/MD jacks.
- When connecting a Sony audio product with CONTROL-A1 compatibility.
- When connecting a Sony product to jacks other than those specified in the previous table (e.g., when connecting a Sony LD player to the VIDEO 3 jacks).
- When exchanging non-Sony audio or video equipment with a Sony product.

Notes

- If your VCR has a COMMAND CODE selector switch (for VTR1, VTR2, or VTR3), set the switch to the applicable setting. If your VCR has a built-in StarSight tuner, you must set the COMMAND CODE selector switch to VTR 3.
- If your CD changer has a COMMAND MODE selector switch (for CD 1, CD 2, or CD 3), normally it should be set to "CD 1". However, if your CD changer has VIDEO OUT terminals, set the command mode to "CD 2" or "CD 3" ("CD 3" should only be used when making CONTROL-A1 connections).

Registering non-Sony audio/video equipment

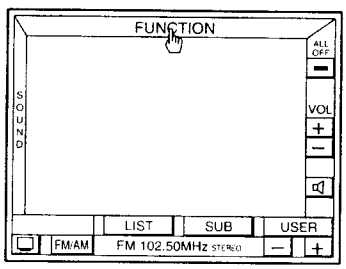
If you connect audio or video equipment made by another manufacturer, you must program the IR codes used by the equipment before you can control it through the receiver.

You can program up to 120 IR codes, including user IR codes; however, depending on the type of codes recorded, the maximum limit may be less than 100. It may be difficult or impossible to program up to 120 codes under the following conditions:

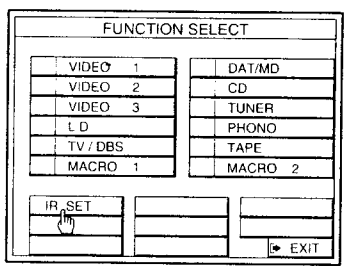
- When programing IR codes of special remotes such as card type remotes, or remotes for household appliances such as air conditioners.
- When programing from remotes with weak batteries.
- When programing IR codes that have been programed to a programmable remote (i.e., any IR code not originally supplied in the respective remote).

Registration

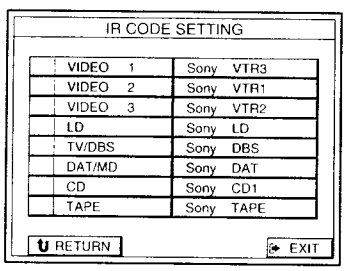
1 Click FUNCTION in the main menu.



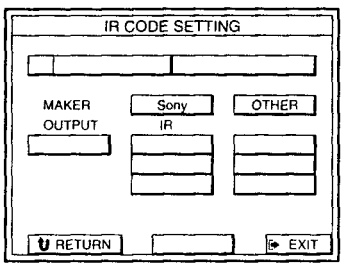
2 Click IR SET.



3 Click the appropriate function.

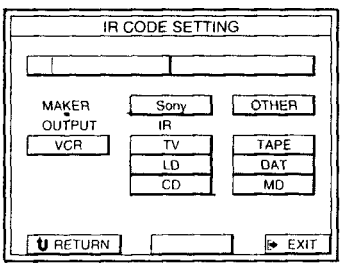


4 Click "Sony" for a Sony product or OTHER for a non-Sony product.

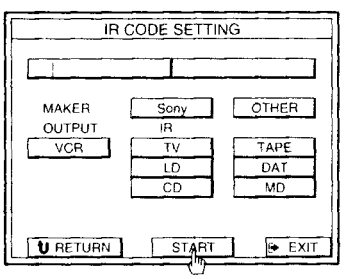


If the program source is a Sony product
The IR codes are programed automatically and registration is complete (click RETURN or EXIT).
To take advantage of CONTROL-A1 compatible audio components, such as multi-disc CD players, click CONTROL-A1 to select CONTROL-A1.

5 Click the respective program source.

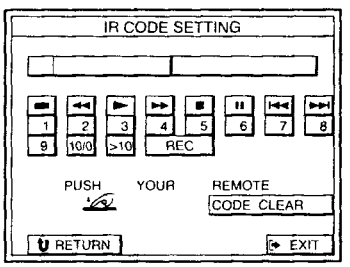


If the equipment is not a video deck or laser disc player
Cover the IR sensor on the equipment to prevent accidental operation during the programing procedure, click START, then go to step 6.

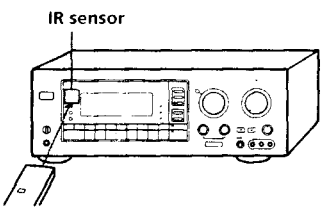


If the equipment is a video deck or laser disc player:
1 Click START.
A list of other manufacturers appears.
2 Click the manufacturer of the respective equipment and the IR codes for that program source are registered automatically. (If the manufacturer is not listed, cover the IR sensor on the equipment to prevent accidental operation during the programing procedure, click "OTHER", then go to step 6).
3 Click TEST.
If the selected program source turns on, it means the IR codes have been registered. This ends the procedure.
If the program source does not turn on, click the number button beside the manufacturer's name to select another number, then click TEST again. If the program source still does not turn on, cover the IR sensor on the equipment to prevent accidental operation during the programing procedure, click "OTHER", then go to step 6.

6 When "PUSH YOUR REMOTE" appears on the TV screen, press the button on your audio/video equipment's remote that corresponds to the control button highlighted on the TV screen.
[-] is the POWER switch.



When programing the IR code, point the remote at the IR sensor on the receiver from a distance no greater than 4 inches (10 cm) and hold down the button on the remote for about 5 seconds until the instruction "RELEASE YOUR REMOTE" appears and the IR code setting indicator turns off.



Keep the remote pointed horizontally at the IR sensor until the code is programed.
If you tilt or move the remote during the programing process, the IR code may not be recorded correctly.

Repeat this procedure for the remaining buttons
After you've programed all the IR codes, the IR CODE SETTING menu reappears.

To program special IR codes that do not appear as on-screen controls
See "Programming Other Infrared (IR) Codes (USER IR setting)" on page 21.

(continued)

7 Repeat steps 3 to 6 to program IR codes from other program sources.

To exit to the main menu

Click EXIT.

To return to a previous menu

Click RETURN.

To erase IR codes

Click CODE CLEAR.

- To erase a specific IR code
  1 Click SINGLE IR CODE CLEAR.
  2 Click the button you want to clear.
  "Are you sure?" appears for confirmation.
  3 Click YES to erase the code.
  "CODE CLEAR!" appears in the display.
  To stop before erasing a code, click NO.
  To erase another code repeat steps 2 and 3.
- To erase all the IR codes for the current component (e.g., OTHER CD).
  1 Click (OTHER CD) CODE CLEAR.
  "Are you sure?" appears for confirmation.
  2 Click YES to erase the codes.
  "CODE CLEAR!" appears in the display.
  To stop before erasing the codes, click NO.
- To erase all the IR codes.
  1 Click ALL IR CODE CLEAR.
  "Are you sure?" appears for confirmation.
  2 Click YES to erase the codes.
  "CODE CLEAR!" appears in the display.
  To stop before erasing all the codes, click NO.

If the IR codes do not operate as expected

- Perform the programing operation(s) again to make sure the IR codes were programmed correctly.
- If you experience difficulty operating the INPUT, number, or ENTER buttons of a video deck or laserdisc player after automatic registration from the manufacturer list in step 5. Program the IR codes for that equipment manually as shown in step 6.
- On some laser disc players made by other manufacturers, the ▶▶ and ◀◀ buttons may not operate correctly even after automatically registration from the manufacturer list in step 5. If this happens, perform step 6 to manually program the IR codes for the ▶▶ and ◀◀ buttons, as well as any other buttons that you want to use with the laser disc player.
- If you register a playback source as TOSHIBA 2 or RCA 2, you cannot turn the TV set on or off using the receiver's remote (the power will not go on when you click TEST).
- Some IR codes may not have been successfully programed, even if "RELEASE YOUR REMOTE" appears on the TV screen. In this case, try programing the IR code again. If the IR code still cannot be programed, follow the procedure described in "Programming Other Infrared (IR) Codes (USER IR setting)" on page 21.
- The unit may not be able to record IR codes with special waveforms produced on some remotes.

Notes

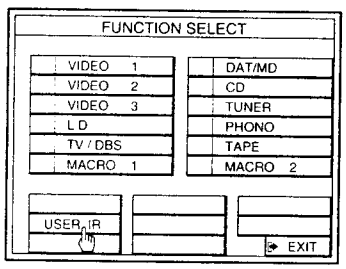
- Do not register the same type of component (i.e., an LD player) at several different functions.
- The unit emits an IR signal that cancels the automatic playback function of program sources, such as laser disc and CD players, designed to start playing the moment they are turned on. To activate the auto play feature, set the receiver's AUTO PLAY function to on.
- Keep the infrared sensor away from fluorescent light or direct sunlight. Otherwise, the IR codes may not be recorded.
- Even if the power cord has been disconnected from the AC power outlet, recorded IR codes will stay in the memory for approximately two weeks. If they disappear, "ALL CLEAR!" will appear on the TV screen the next time you turn on the receiver.

Programming Other Infrared (IR) Codes (USER IR setting)

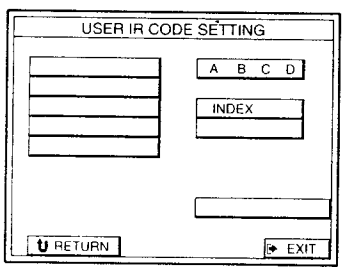
Use the USER IR CODE SETTING menu to program any IR codes that could not be programed in "Registering Audio/Video Equipment". These can include codes for audio and video equipment, as well as other types of equipment, made by almost any manufacturer. The following procedure lets you to program up to 20 USER IR codes.

1 Click FUNCTION in the main menu.

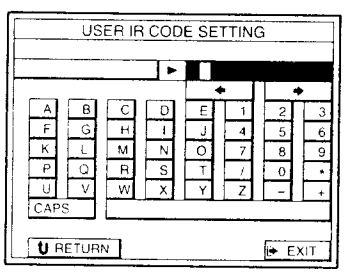
2 Click USER IR.



3 Click A B C D to select a user IR code page, then click INDEX.



4 Spell out a name for the IR code by clicking each character in order. The name is stored automatically.



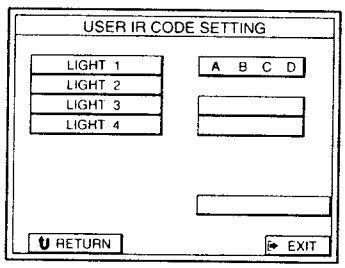
To enter a space
Click the space bar.

To switch between upper and lower case letters
Click CAPS.

If you make a mistake
Click ← or → to move the cursor to the character to be changed, then click the correct character (or click the space bar to erase the character).

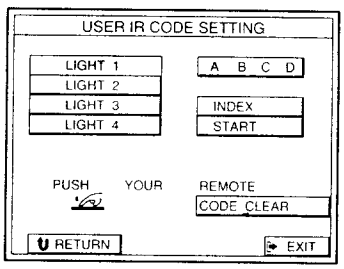
5 After entering the name, click RETURN to go back to the USER IR CODE SETTING menu.
Repeat steps 3 through 5 until you enter the names of all the IR codes you want to program.

6 Click the name of the first IR code.

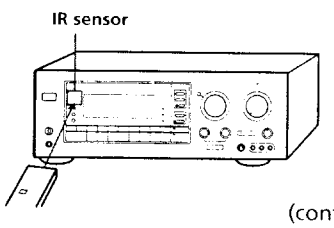


Before going to step 7, cover the IR sensor on the respective equipment to prevent accidental operation during the programing procedure.

7 Click START.
When "PUSH YOUR REMOTE" appears on the TV screen, press the button you want to program.



When programing the IR code, point the remote at the IR sensor on the receiver from a distance no greater than 4 inches (10 cm) and hold down the button on the remote for about 5 seconds until the instruction "RELEASE YOUR REMOTE" appears and the IR code setting indicator turns off.



(continued)

Keep the remote pointed horizontally at the IR sensor until the code is programed.
If you tilt or move the remote during the programing procedure, the IR code may not be programed correctly.

Repeat this procedure for the remaining buttons
After you've programed all the IR codes, the IR CODE SETTING menu reappears.

To reprogram a specific IR code.
Click the button where the IR code was programed, then click START.

To Erase IR codes
Click CODE CLEAR.
- To erase one specific IR code
  1 Click SINGLE IR CODE CLEAR.
  2 Click the button you want to clear.
  "Are you sure?" appears for confirmation.
  3 Click YES to erase the code.
  "CODE CLEAR!" appears in the display.
  To stop before erasing a code, click NO.
  To erase another code repeat steps 2 and 3.
- To erase all the user IR codes.
  1 Click USER IR CODE CLEAR.
  "Are you sure?" appears for confirmation.
  2 Click YES to erase the codes.
  "CODE CLEAR!" appears in the display.
  To stop before erasing the codes, click NO.
- To all the IR codes.
  1 Click ALL IR CODE CLEAR.
  "Are you sure?" appears for confirmation.
  2 Click YES to erase the codes.
  "CODE CLEAR!" appears in the display.
  To stop before erasing all the codes, click NO.

Notes
- Even if the receiver's power cord has been disconnected from the AC power outlet, programed IR codes will stay in the memory for approximately two weeks. If they disappear, "ALL CLEAR" will appear on the TV screen when you turn on the unit again.
- The power switch on some air conditioners use two independent IR codes, even when there is only one switch. If you cannot turn the air conditioner off with the IR code programed for the on/off switch, repeat the procedure and program the on and off IR codes separately.
- The operation of some air conditioner remote commanders require two-way signal exchange with the air conditioner itself. Though it is possible to program the IR codes of such remote commanders in the unit, their use may not result in normal air conditioner operation.
- The unit may not be able to register IR codes with special waveforms produced on some remote commanders.

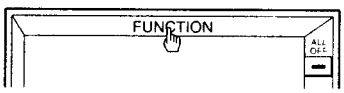
Selecting a Component

To listen to or watch a connected component, go to the function select menu and click on the program source you desire.
Before you begin, make sure you have:

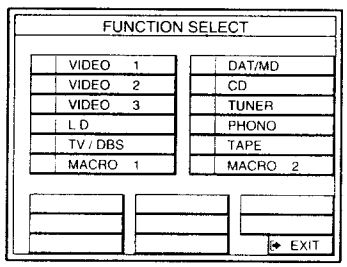
- Connected the RC antenna, IR emitter, and all components securely and correctly as indicated on pages 8 to 13.
- Registered the IR codes for the connected components as indicated on pages 16 to 22.
- Turned MASTER VOL to the leftmost position (0) to avoid damaging your speakers.

1 Pick up the remote and press the button once or twice to turn on the receiver. Your TV should turn on automatically, if not see pages 16 to 17 to register your TV.

2 Click FUNCTION in the main menu.



3 Click the component you desire.
The component starts playing automatically.



To listen to or watch	Click
Video tapes	VIDEO 1, VIDEO 2 or VIDEO 3
Laser discs	LD
TV programs or DBS	TV/DBS
Digital Audio Tapes (DAT) or MiniDiscs (MD)	DAT/MD
Compact Discs (CD)	CD
Radio programs	TUNER
Records	PHONO*1
Analog audio cassettes	TAPE*2

*1 Control buttons do not appear when you select PHONO.
*2 The tape icon turns green during tape monitoring.

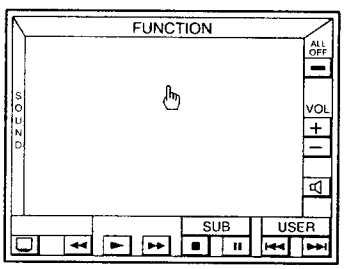
To listen to decoded Dolby Digital AC-3 program sources

Select a visual source (TV, LD, VIDEO 1, VIDEO 2, or VIDEO 3) then click 5.1CH INPUT ON.
The 5.1CH INPUT ON or OFF settings are stored separately for each visual source.

To exit to the main menu

Click EXIT.

4 Click VOL + or – to adjust the volume.
To adjust the volume of the TV's speakers, use the volume control on the TV.



Control buttons

To operate the selected component

The control buttons at the bottom of the screen function as a remote control for the selected component. Click the button representing the operation you desire. Refer to the manual supplied with the component you are controlling for details regarding its operation.

To show other control buttons for the selected component

Click SUB.

To execute IR commands programed from other remotes

1 Click USER.
2 Click A B C D repeatedly to display the command you desire.
3 Click the button for the respective command.
To program IR codes from other remotes, see page 21.

To mute the sound

Click [speaker]. The icon changes to [muted] and turns green. The MUTING indicator on the front panel lights up. To turn the sound back on, click on the icon again.

To turn off the TV when listening to an audio source

Click [TV] in the bottom left corner. See "Remote Operation of Audio Sources Without the TV (illuminated control flasher)" on page 41 for details regarding remote operation without the TV.

To turn off the selected component

Click [power] in the bottom left corner.

(continued)

To turn off all connected components

Click ALL OFF [⏻].

If you have components that turn on only when you press the play button, they will not turn off when you click ALL OFF when the AUTO PLAY function (see page 42) is off. In this case, click [⏻] then on the play button (▶).

Notes

- The AUTO PLAY function is set at the factory to start playing the component immediately after it is selected. To turn AUTO PLAY off, see page 42.
- Components of the same type will be controlled simultaneously by the on-screen controls.
  For example, if you use the on-screen controls to start playing one of two Sony laser disc players in the room, the other will also start playing at the same time.
- If a component does not respond, it may be because IR codes from the IR repeater are not fully reaching the selected component source. If this happens, change the position of the IR repeater or program source.

Watching TV or Video programs

When you watch TV or video programs, we recommend you play audio portion through the receiver instead of your TV's speaker. This lets you take advantage of the receiver's surround sound effects, like Dolby Surround, and lets you use the receiver's remote to control the audio.
Turn off the speakers on your TV before you start so you can enjoy the surround sound from your receiver.

Watching TV programs

You can use the TV tuner built in to your video deck to watch TV programs using the receiver's on-screen operations.

1 Select the appropriate function (e.g. "VIDEO 2").
2 Click TV➡ in the VCR controls at the bottom of the screen.
  The control panels switches to the video decks's TV controls.
3 Click CH – or + to change the channel.
  To return to the VCR controls, click VTR➡.

We recommend switching to the VCR controls before switching functions. If you leave directly from the TV controls to the FUNCTION SELECT menu, the AUTO PLAY (page 41) function will not operate the next time you select the video deck as a program source.

Watching TV programs using a Sony TV (with TV OUT jacks)

When connecting a Sony TV with TV OUT jacks, connect the TV OUT jacks to this unit's TV/DBS IN jacks, then set the TV/DBS function to "Sony TV". This lets you watch TV programs by selecting the TV/DBS function. Also, use the TV's VIDEO LABEL function to set the video input jack (e.g., VIDEO 1 IN) connected to this unit's MONITOR OUT jack to "RECEIVER". If your Sony TV does not have TV OUT jacks, refer to "Watching TV programs" above and use the TV tuner built in to your video deck to watch TV programs.

Controlling a Sony DBS receiver

Before you can control the DBS receiver, the IR codes for the function representing the DBS receiver must be set to "Sony DBS". The TV function is factory set to Sony DBS (to set a different function to Sony DBS see page 18).

1 Select the appropriate function (e.g. TV)
2 Click TV ➡.
3 Click CURSOR MENU.
  The DBS receiver control panel appears.
  The icons in the cursor menu have the same function as those on the DBS receiver (except for SELECT, which substitutes for the enter button). Click the boarders at the edge of the screen to move the DBS cursor.
  To jump between the current and the previous channels, click JUMP.

Controlling StarSight functions of a Sony VCR

Before you can control StarSight functions, the IR codes for the function representing the StarSight tuner must be set to "Sony VTR 3". The VIDEO 1 function comes factory set to "Sony VTR 3" (to set a different function to Sony VTR 3 see page 18).

1 Select the appropriate function (e.g. "VIDEO 1").
2 Click TV ➡.
3 Click STAR ➡.
  The StarSight control panel appears.
  Click the boarders at the edge of the screen to move the StarSight cursor.

To change the video input of a Sony VCR

Click the INPUT icon in the video deck control panel.

To switch the screen size when using a wide TV monitor

Click [▭] to display the WIDE TV DISPLAY control panel, then click the button for the display mode you desire.
This operation is only possible when "TV SIZE" in the TV MONITOR SET menu is set to WIDE (see page 16).

Tuning and Presetting Radio Stations

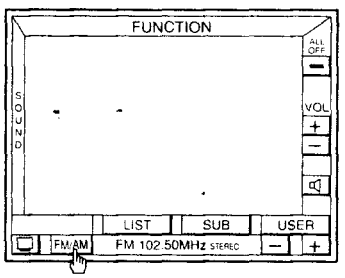
This receiver lets you tune and preset radio stations from the on-screen display. You can store up to 30 FM or AM stations, and recall them later with a simple click. To assign names to the preset stations, see page 36.

Before you begin, make sure you have:
- Connected the RC antenna securely and correctly as indicated on page 8.
- Connected an FM / AM antennas to the receiver as indicated on page 9.

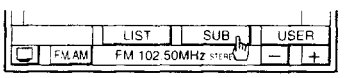
1 Click FUNCTION in the main menu.

2 Click TUNER .

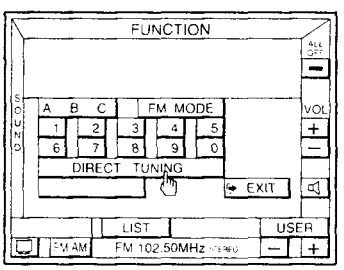
3 Click FM / AM to select FM or AM.



4 Click SUB.

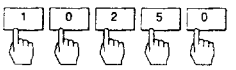


5 Click DIRECT TUNING.

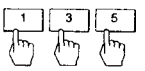


6 Click the numeric buttons to enter the frequency.

Example 1:FM 102.50 MHz



Example 2:AM 1350kHz
(You don't have to enter the last "0.")



(With 10 kHz steps only)

7 When you tune in AM stations, adjust the direction of the AM loop antenna for optimum reception.

To receive other stations
Repeat Steps 3 and 4.

If an FM stereo program is distorted
The "STEREO" flashes next to the frequency. Click FM MODE to change to monaural (MONO) reception. You will not have the stereo effect but the distortion will be reduced. To return to the auto stereo mode, click this icon again.

If "STEREO" remains off
Click FM MODE, even when an FM stereo broadcast is received.

If you cannot tune in a station and the entered numbers are flashing
Make sure you've entered the right frequency. If not, re-enter the frequency you want.
If the entered numbers still flash, the frequency is not used in your area.

If you enter a frequency not covered by the tuning interval
The entered value is automatically rounded up or down to the closest covered value.

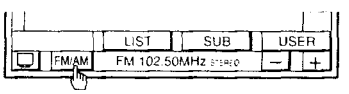
Tuning intervals for direct tuning are:
FM: 50 kHz intervals
AM: 10 kHz intervals (to change to 9 kHz intervals, see page 54)

Receiving broadcasts by scanning stations (automatic tuning)

1 Click FUNCTION in the main menu.

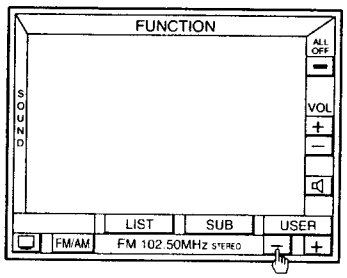
2 Click TUNER .

3 Click FM / AM to select FM or AM.



(continued)

4 Click the + or – icon next to the frequency to tune in a station. Press the + icon for a higher station number; press the – icon for a lower one.



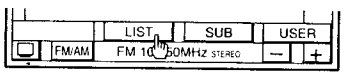
During automatic tuning

When you tune past either end of the band, the receiver automatically jumps to the opposite end and continues scanning in the same direction. Every time a station is received, the receiver stops scanning. To continue scanning, press the icon again.

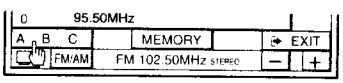
Presetting

1 Tune in the station you want.

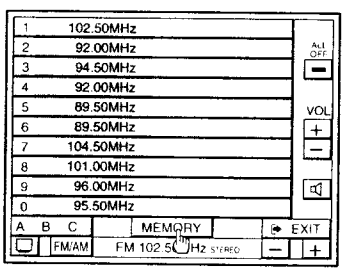
2 Click LIST to display the memory list.



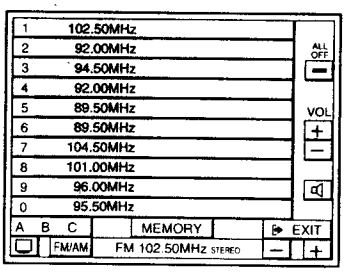
3 Click A B C repeatedly to select the page (A, B, or C) where you want to store the station.



4 Click MEMORY.
MEMORY turns red.



5 Click the button (0 to 9) where you want to store the station.
The button lights up and the station is stored.



6 Repeat steps 1 through 5 to preset up to 30 stations.
You can also use the + or – icon next to the frequency to tune stations from the LIST screen.

To change a preset station

Preset a new station at the number you want to change.

Note

If the AC power cord is disconnected for about one week, the preset stations will be cleared from the receiver's memory, and you will have to preset the stations again.

To watch FM simulcast TV programs

Make sure that you tune in the simulcast program on both the TV (or VCR) and the receiver.

Tuning preset stations (preset tuning)

1 Click FUNCTION in the main menu.

2 Click TUNER .

3 Click LIST.

4 Click A B C repeatedly to display the station you want.

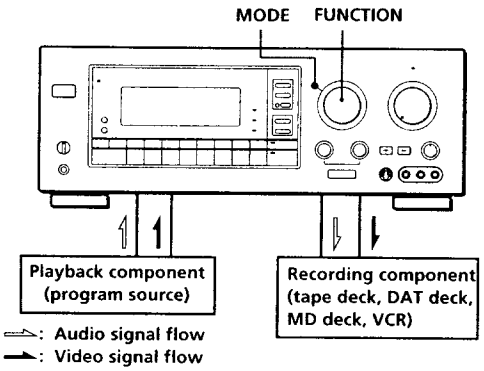
5 Click the button (0 to 9) for the respective station.

To recall preset stations from the SUB menu

1 Click SUB.
2 Click A B C repeatedly to select the memory page.
3 Click the number of the station you want.

Recording

This receiver makes it easy to record to and from the components connected to the receiver. You don't have to connect playback and recording components directly: once you select a program source on the receiver, you can record and edit from the on-screen display as you normally would using the controls on each component.
Before you begin, make sure you've connected all components properly.

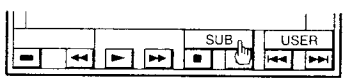


You can record on a cassette tape, Digital Audio Tape, MiniDisc, or video tape (etc.) using the receiver. See the instruction manual of your recording component if you need help.

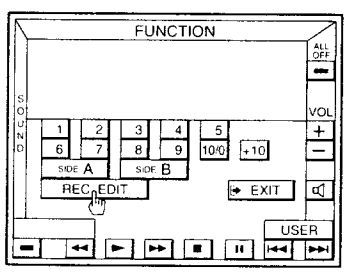
1 Click FUNCTION in the main menu.

2 Click the program source you want to record ("LD" for example).

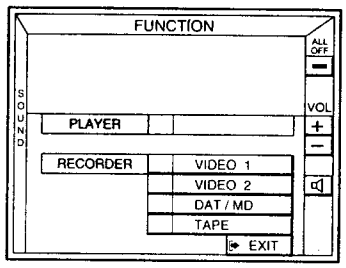
3 Click on SUB.



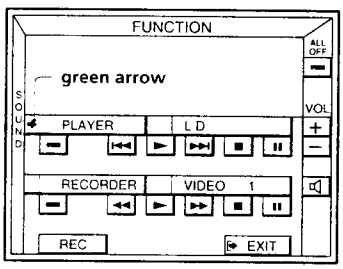
4 Click REC EDIT.



5 Click the component you want to record to ("VIDEO 1" for example).



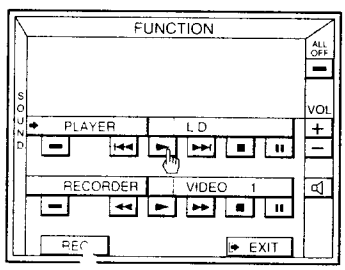
The control panels for both components appear on the TV screen. "PLAYER" for the program source, and "RECORDER" for the program destination.



The green arrow indicates the source component. When recording, the green arrow should be next to "PLAYER".
Clicking a RECORDER control while recording cuts off the program source (PLAYER).

6 Insert a blank tape into the recording component (or VCR, etc.) and adjust the recording level, if necessary.

7 Click the REC to start recording, then click the PLAYER ► control.
Recording begins.



(continued)

To control the recorder (when not recording)
Click RECORDER. "RECORDER" becomes the source component and you can use the RECORDER controls to rewind and playback the recording (etc.).
Click PLAYER to return control to the original source component.

To monitor the recorded sound when recording to a 3-head cassette deck
1 Click EXIT.
2 Click FUNCTION in the main menu.
3 Click TAPE.

To stop recording
Click on ■ of the recording unit.

To return to the main menu.
Click EXIT.

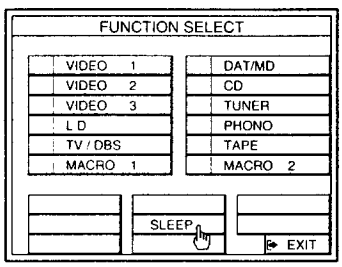
Notes
- There is no sound output from the recording component even though all the buttons on the recording unit's control panel are operational.
- If you click RECORDER during recording, the source being recorded will be cut off.
- If you leave the REC EDIT menu by clicking FUNCTION, SOUND, or EXIT, recording continues, but control returns to the PLAYER side, even if you previously clicked RECORDER.
- If you open the FUNCTION SELECT menu and click another program source while recording, the newly selected program source will be recorded.
- Some cassette decks require that you press the ● REC and ► buttons simultaneously to start recording. To perform one-button from the on-screen display, be sure to record the recording signal as shown in steps 1 to 7 of "Registering non-Sony audio/video equipment" (pages 18 to 20) for both Sony and non-Sony products.
- Sound input through the TAPE connectors on the rear panel cannot be recorded on a recording unit.
- When you record on a DAT or MD connected to the DAT/MD REC OUT jacks, sound adjustments do not effect the recording.
- Sound input through the 5.1 INPUT connectors on the rear panel cannot be recorded on a recording unit.

Using the Sleep Timer

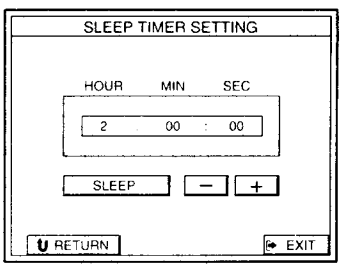
You can set the receiver to turn off automatically at a time you specify.

1 Click FUNCTION in the main menu.

2 Click SLEEP.



3 Click TIMER repeatedly to select the length of the sleep timer. The timer changes as shown below:



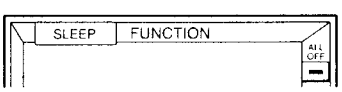
→ 2:00:00 → 1:30:00 → 1:00:00 → 0:30:00 → OFF

You can also freely specify the time
Click + or – to change the sleep time in 1 minute intervals. You can specify up to 5 hours.

To return to the main menu
Click EXIT.

To go to the previous menu
Click RETURN.

When the sleep timer is set
"SLEEP" appears in the upper left corner of the main menu.



You can check the time remaining before the receiver turns off
Click FUNCTION, then click SLEEP. The remaining time appears in the on-screen display.

Introduction

The STR-GA9ESG is provided with a variety of surround features which allow you to listen to a wide range sources in surround sound. Additionally, each sound field is equipped with several adjustable parameters to let you customize the sound to your preference.

To use a pre-programmed sound field

See "Using Pre-programmed Sound Fields" on this page. This section describes how to recall the sound fields and provides a description of each sound field.

To take advantage of Dolby Pro Logic Surround sound

See "Getting the Most Out of Dolby Pro Logic Surround Sound" on page 31. This section describes how to adjust the levels of your speaker system and customize the PRO LOGIC sound fields.

You can find Dolby Surround-encoded software by looking at the packaging
However, some videos and laser discs may use Dolby Surround sound even if it's not indicated on the package.

To create your own sound field

See "Taking advantage of the Sound Fields" and "Customizing Sound Fields" on page 33. "Taking advantage of the Sound Fields" describes how the various parameters affect the sound. "Customizing the Sound Fields" describes how adjust the parameters and provides a chart showing which parameters are available in each sound field.

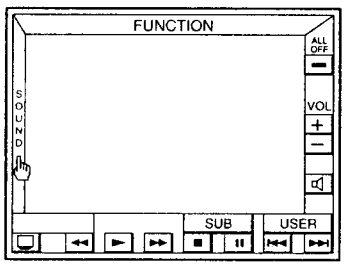
For additional information regarding surround sound

See the "Glossary" on pages 55 and 56.

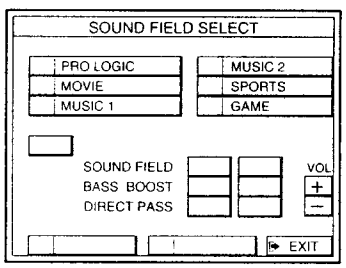
Using Pre-programmed Sound Fields

You can take advantage of surround sound simply by selecting one of the pre-programmed sound fields according to the program you want to play.

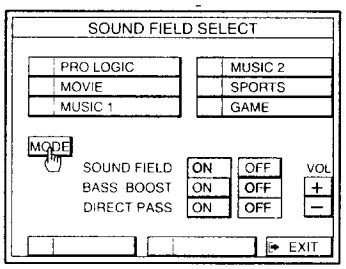
1 While playing a program source, click SOUND in the main menu.



2 Click a sound field genre to select the type of sound field you desire.
The previously selected mode turns on automatically.



2 Click MODE repeatedly to select the mode you desire from the respective genre.
Refer to the chart "Sound fields".



To increase the bass
Click BASS BOOST ON.

(continued)

To return to the main menu.
Click EXIT.

To play without surround effects
Select "ACOUSTIC" from MUSIC 2. The surround effects are defeated but you can still adjust the equalizer (see page 36).

To turn off the sound fields
Click SOUND FIELD ON/OFF.

Note
Surround effects are bypassed when DIRECT PASS is set to ON.

Sound fields

GENRE	MODE	To
PRO LOGIC	PRO LOGIC	Decode programs processed with Dolby Surround.
	ENHANCED	Obtain additional output from rear speakers when decoding Dolby Surround programs.
MOVIE	SMALL THEATER	Add the acoustic reflections of theater to decoded Dolby Surround signals.
	MEDIUM THEATER	
	LARGE THEATER	
	MONO MOVIE	Create a theater-like environment from movies with monaural soundtracks.
MUSIC 1	SMALL HALL	Reproduce the acoustics of a rectangular concert hall. Ideal for soft acoustic sounds.
	MEDIUM HALL	
	LARGE HALL	
	SMALL OPERA HOUSE	Reproduce the acoustics of an opera house. Ideal for musicals and operas.
	MEDIUM OPERA HOUSE	
	LARGE OPERA HOUSE	
MUSIC 2	SMALL JAZZ CLUB	Reproduce the acoustics of a jazz club.
	LARGE JAZZ CLUB	
	SMALL CHURCH	Reproduce the acoustics of a church
	LARGE CHURCH	
	SMALL LIVE HOUSE	Reproduce the acoustics of a live house
	LARGE LIVE HOUSE	
	KARAOKE	Reduce the vocal tracks of stereo music sources.
	ACOUSTIC	Reproduce normal 2 channel stereo with equalization (EQ).
SPORTS	ARENA	Reproduce the feeling of a large concert arena. Great for Rock and Roll.
	STADIUM	Reproduce the feeling of a large open-air stadium. Great for electric sounds.
GAME	GAME 1	Obtain maximum audio impact from video game software.
	GAME 2	Obtain maximum audio impact from monaural video game software.

Getting the Most Out of Dolby Pro Logic Surround Sound

To obtain the best possible Dolby Pro Logic Surround sound, first select the center mode according to your speaker system. Then, equalize the speaker levels and adjust the delay time of the PRO LOGIC sound field.

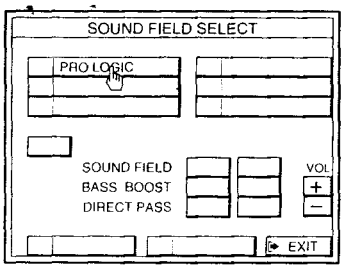
Note that you must have at least one additional pair of speakers and/or one center speaker to do the following adjustments.

Selecting the center mode

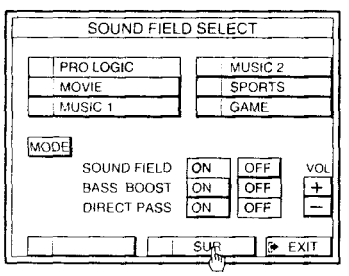
The receiver offers you four center modes: PHANTOM, 3 CHANNEL LOGIC, NORMAL, and WIDE. Each mode is designed for a different speaker configuration. Select the mode that best suits your speaker system configuration.

1 Click SOUND in the main menu.

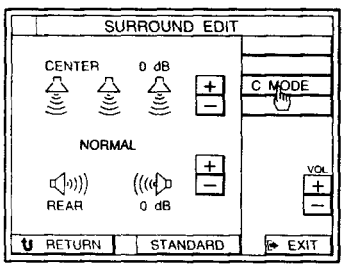
2 Click PRO LOGIC to select the pro logic sound field.



3 Click SUR.
The Dolby Pro Logic SUR EDIT screen appears. To select the pro logic sound field.



4 Click C MODE repeatedly until the center mode you want is displayed. Select the center mode by referring to the following chart.



If you have	Select	So that
Front and rear speakers, no center speaker	PHANTOM	The sound of the center channel is output from the front speakers.
Front and center speakers, no rear speaker	3 CH LOGIC (3 Channel Logic)	The sound of the rear channel is output from the front speakers.
Front and rear speakers, and a small center speaker	NORMAL	The bass sound of the center channel is output from the front speakers (because a small speaker cannot produce enough bass).
Front and rear speakers, and a center speaker equivalent to your front speakers	WIDE	For wide range Dolby Pro Logic Surround sound to all speakers.

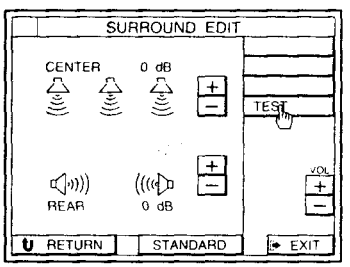
(continued)

Adjusting the speaker volume

The test tone feature lets you set the volume of your speakers to the same level. (If all of your speakers have equal performance, you don't have to adjust the speaker volume.)

Using the remote lets you adjust the volume level from your listening position.

1 Click TEST.
The tone is emitted from each speaker sequentially. The speaker emitting the test tone is shown in red on the TV screen.



2 Adjust the volume levels so that you hear the test tone from each speaker at the same volume level when you are in your listening position:
- To adjust the volume between the front right and front left speakers, use the BALANCE control on the front of the receiver.
- To adjust the level of center speaker, click CENTER + or –.
- To adjust the level of rear speakers, click REAR + or –.

3 Click TEST to turn off the test tone.

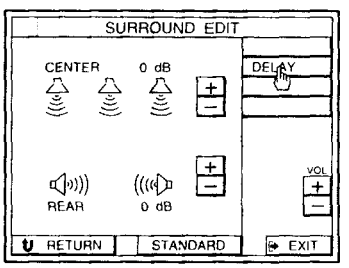
You can adjust all speakers at one time
Use MASTER VOL on the front of the receiver.

Adjusting the delay time

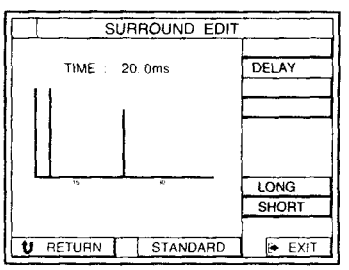
You can make the surround sound more effective by delaying the output from the rear speakers (delay time). You can adjust the delay time in 0.1 ms steps within the range of 15 to 30 ms. For example, if you've placed the rear speakers in a large room or apart from your listening position, set the delay time shorter.

1 Start playing a program source encoded with Dolby surround sound.

2 Click DELAY.



3 Click SHORT or LONG to adjust the delay time.



To return to the main menu
Click EXIT.

To go to the previous menu
Click RETURN.

To reset the current sound field to the original factory settings
Click STANDARD.

Adjusting the equalizer

You can adjust the tone of the speakers.
Follow the procedure described in "Adjusting the equalizer" on page 33.

Taking Advantage of the Sound Fields

This receiver uses digital signal processing to reproduce the sound effects of various listening environments, such as a movie theaters and concert halls (etc.). By adjusting the surround parameters you can control these sound elements to create a custom listening environment.

Room size simulation (ROOM SIZE)

Before sound reaches our ears, it is reflected many times between the left and right walls, ceiling, and floor. In a large room, sound takes more time to bounce from one surface to another than in a smaller room.
The ROOM SIZE parameter lets you control the spacing of the early reflections to simulate a sonically larger (L), or smaller (S) room. The midpoint designates a standard room with no adjustment.

Wall material simulation (WALL TYPE)

When sound is reflected off soft material, such as curtain, the high frequency elements are reduced. A hard wall is highly reflective and does not significantly affect the frequency response of the reflected sound.
The WALL TYPE parameter lets you control the level of the high frequencies to alter the sonic character of your listening environment by simulating a softer (S), or harder (H) wall. The midpoint designates a neutral wall (made of wood).

Seat position simulation (FRONT/REAR and LEFT/RIGHT)

If you sit in the front of a room, you hear more direct sound from the front speakers. As you move to the rear, the reflected sound increases. Similarly, the reflected sound changes when you move from left to right, and vice versa.
The FRONT/REAR and LEFT/RIGHT parameters let you control the balance of direct and reflected sound to simulate your listening position.
In the FRONT/REAR parameter, "F" signifies the front of the room and "R" signifies the rear. The midpoint designates the center.
In the LEFT/RIGHT parameter, "L" signifies the left side of the room and "R" signifies the right side. The midpoint designates the center.

Reverberation time (REVERB)

This parameter adjusts the length of time required for the reverberation (echoes) generated from a given sound to attenuate –60 dB.
You can choose shorter (S) or longer (L) reverberation times.

Note
The EFFECT parameter allows you to adjust the overall presence of the sound field.

Customizing the Sound Fields

Each sound field is composed of an equalizer (bass, midrange, or treble) and surround sound parameters — variables of sound, that create the sound image. You can customize the sound fields by adjusting some of the sound parameters to suit your listening situation. See the chart on page 35 for the parameters available in each sound field.
Once you customize the sound fields, they are stored in memory unless the receiver is unplugged for about 1 week.

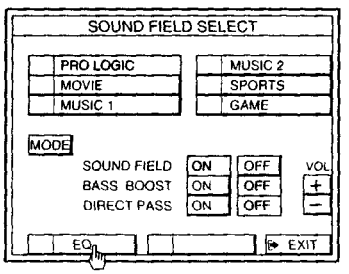
Adjusting the equalizer

Adjust the tone of the front, center and rear speakers for optimum sound. You can adjust the tone of all sounds fields, including Dolby Surround.

1. Start playing a program source, then click SOUND in the main menu.
2. Click the genre of sound field you want to reset. The previously selected mode turns on automatically.
3. Click MODE repeatedly to select the mode you want to adjust.

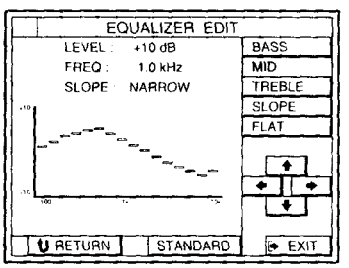
(continued)

4 Click EQ.
The EQ EDIT menu appears.



5 Click SLOPE to select the type of adjustment you want: NARROW (to adjust a specific frequency), MEDIUM (to a small group of frequencies), or WIDE (to adjust a broad range of frequencies).

6 Click BASS, MID, or TREBLE to select a frequency band.



7 Click ← or → to select the frequency to be adjusted. Click ↑ or ↓ to raise or lower the level of the selected frequency.

Note
You may hear some noise as you adjust the parameters.

8 Repeat steps 5 through 7 for other frequency bands until you obtain the equalization curve you desire.

To start adjustment with a flat equalizer curve
Click FLAT.

To reset the tone parameter of the selected sound field to the original factory settings
Click STANDARD.

To exit to the main menu
Click EXIT.

To return to the previous menu
Click RETURN.

To adjust the volume
Click VOL + or −.

Adjusting surround sound parameters

Change the surround parameters to fit your listening situation. Refer to the chart on the next page for parameters you can adjust in each sound field.
To adjust the parameters of the PRO LOGIC sound field, see "Getting the Most Out of Dolby Pro Logic Surround Sound" on page 31.

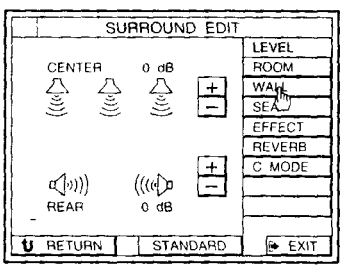
1 Start playing a program source, then click SOUND in the main menu.

2 Click the genre of sound field you want to reset. The previously selected mode turns on automatically.

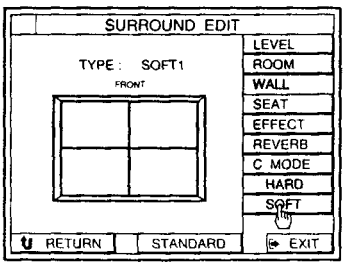
3 Click MODE repeatedly to select the mode you want to adjust.

4 Click SUR.
The SUR EDIT menu appears.

5 Click the icon for the parameter you want to adjust. The respective parameter chart appears on-screen.



6 Click an adjustment icon (+ / –, UP/DOWN, SHORT, LONG, etc.,) to adjust the parameter. The changes are saved automatically.



To reset all parameters of the current sound field to the original factory settings.
Click STANDARD.

To exit to the main menu
Click EXIT.

To return to the previous menu
Click RETURN.

To adjust the volume
Click VOL + or –.

Note
If you make new adjustments to a sound field, the previous settings are replaced by the new ones.

Adjustable parameters

GENRE	MODE	EQ	EFFECT LEVEL	REAR LEVEL	CENTER LEVEL	ROOM SIZE	WALL TYPE	FRONT BACK	LEFT RIGHT	DELAY	REVERB TIME
PRO LOGIC	PRO LOGIC	●		●	●					●	
	ENHANCED	●		●	●					●	
MOVIE	SMALL THEATER	●	●	●	●	●	●	●	●		●
	MEDIUM THEATER	●	●	●	●	●	●	●	●		●
	LARGE THEATER	●	●	●	●	●	●	●	●		●
	MONO MOVIE	●	●	●		●	●	●	●		●
MUSIC 1	SMALL HALL	●	●	●		●	●	●	●		●
	MEDIUM HALL	●	●	●		●	●	●	●		●
	LARGE HALL	●	●	●		●	●	●	●		●
	SMALL OPERA HOUSE	●	●	●		●	●	●	●		●
	MEDIUM OPERA HOUSE	●	●	●		●	●	●	●		●
	LARGE OPERA HOUSE	●	●	●		●	●	●	●		●
MUSIC 2	SMALL JAZZ CLUB	●	●	●		●	●	●	●		●
	LARGE JAZZ CLUB	●	●	●		●	●	●	●		●
	SMALL CHURCH	●	●	●		●	●	●	●		●
	LARGE CHURCH	●	●	●		●	●	●	●		●
	SMALL LIVE HOUSE	●	●	●	●	●	●	●	●		●
	LARGE LIVE HOUSE	●	●	●	●	●	●	●	●		●
	KARAOKE	●	●	●		●	●	●	●		●
	ACOUSTIC	●									
SPORTS	ARENA	●	●	●		●	●	●	●		●
	STADIUM	●	●	●		●	●	●	●		●
GAME	GAME 1	●	●	●		●	●	●	●		●
	GAME 2	●	●	●		●	●	●	●		●

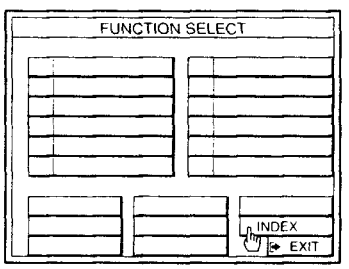
Using the INDEX functions

The index functions let you customize the function menu, tuner preset list, and CD list. You can specify the icons and names up to 8 characters long for each function button, specify names up 8 characters long for each preset radio station, and specify names up to 12 characters long for each compact disc (up to 200 discs) or group of discs in a CD changer.

Changing icons and names of function buttons

1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

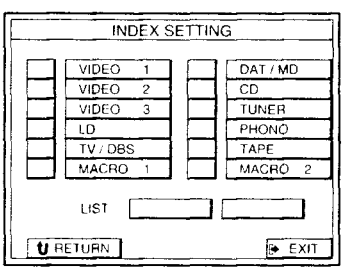
2 Click INDEX.
The INDEX SETTING screen appears.



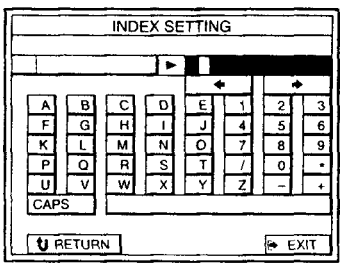
3 Click the icon to be changed.

4 Click the icon you desire from the icon menu, then click RETURN.

5 Click the function button to be changed.



6 Spell out the new name by clicking each character in order. The name is stored automatically.



To enter a space
Click the space bar.

To switch between upper and lower case letters
Click CAPS.

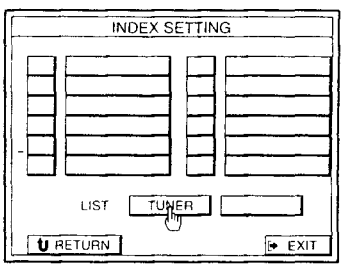
If you make a mistake
Click ← or → to move the cursor to the character to be changed, then click the correct character (or click the space bar to erase the character).

To go back to the previous menu
Click RETURN.

To exit to the main menu
Click EXIT.

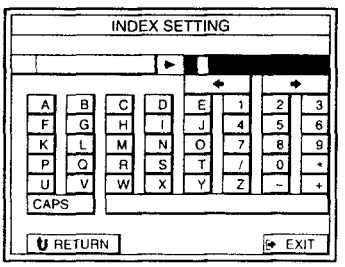
Adding names to preset radio stations

1 Click the LIST TUNER button in the INDEX SETTING screen.



The list of the preset frequencies appears. Click on A, B, or C to select the page. Then click on 0 to 9 to select the station to be named.

2 Spell out the name by clicking each character in order. The name is stored automatically.



To enter a space
Click the space bar.

To switch between upper and lower case letters
Click CAPS.

If you make a mistake
Click ← or → to move the cursor to the character to be changed, then click the correct character (or click the space bar to erase the character).

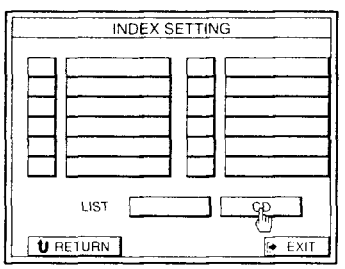
To go back to the previous menu
Click RETURN.

To exit to the main menu
Click EXIT.

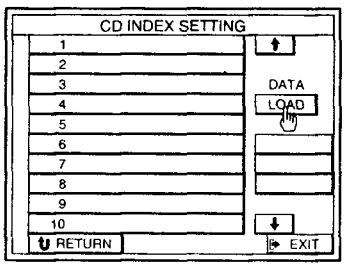
Adding names to CDs in a Sony CD changer equipped with a CTRL A1 jack

If your CD changer is a Sony product with a CTRL A1 jack, you can download all of the CD name data in the CD changer, thus saving you the trouble of adding names one by one.

1 Click the LIST CD button in the INDEX SETTING screen.



2 Click the DATA LOAD button.



CD name data is downloaded and after a few minutes, the downloaded data appears in the CD INDEX SETTING menu.

Notes

- The DATA LOAD button will not appear if the CD changer is not registered as a Sony CONTROL A1 CD in the IR CODE SETTING menu (see page 19) or if the CD changer is not turned on.
- The DATA LOAD procedure will not work if the CD changer is not turned on or if the CTRL A1 connection is incomplete (see page 10).
- If the following characters have been recorded in the CD changer, they will appear as blanks in the on-screen display: # $; • ä ö ü

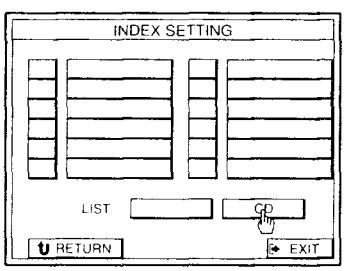
To go back to the previous menu
Click RETURN.

To exit to the main menu
Click EXIT.

Adding names to CDs in non-Sony CD changers or Sony CD changers without CTRL A1 jacks

If your CD changer is not a Sony Product or does not have a CTRL A jack, you will have to add names manually as follows;

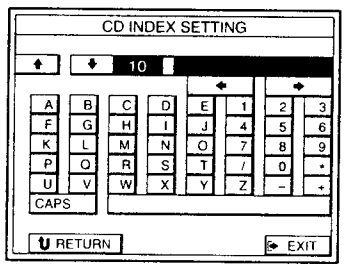
1 Click the LIST CD button in the INDEX SETTING screen.



(continued)

2 • To name a disc
Click TITLE. Display the number of the disc to be named by clicking the ↑ or ↓ icon on the right side of screen, then click the disc to be named.
• To name a group
Click GROUP, then click the group to be named.

3 Spell out the name by clicking each character in order. The name is stored automatically.



To enter a space
Click the space bar.

To switch between upper and lower case letters
Click CAPS.

If you make a mistake
Click ← or → to move the cursor to the character to be changed, then click the correct character (or click the space bar to erase the character).

To go back to the previous menu
Click RETURN.

To exit to the main menu
Click EXIT.

Operating a CD Changer

Grouping CDs

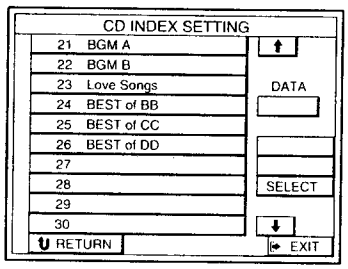
You use the on-screen display to assign your CDs to one or more groups.

1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

2 Click INDEX.
The INDEX SETTING screen appears.

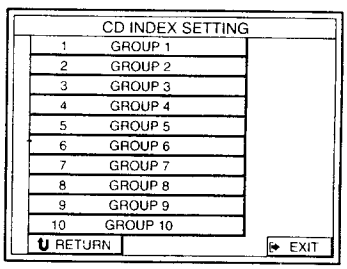
3 Click the LIST CD button.

4 Click SELECT, then click the disc you want to assign to a new group.



If the disc you want is not displayed
Click the ↑ or ↓ icon to display the disc.

5 Click the names of the groups you want to assign the CD to.
For example, to assign the CD to both "GROUP 1" and "GROUP 4", click both group names so that they are highlighted.



To remove the CD from one or more groups
Click the highlighted group name so that it goes out.

To go back to the previous menu
Click RETURN.

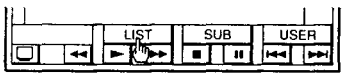
To go back to the main menu
Click EXIT.

Playing CDs with the LIST function

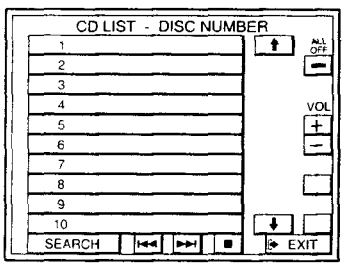
1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

2 Click CD.

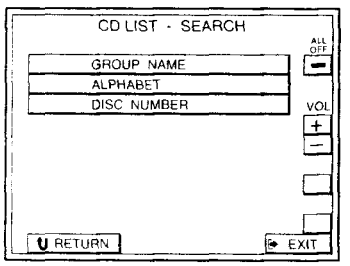
3 Click LIST.



4 Click the ↑ or ↓ icons to see the next or previous 10 discs, then click the disc. Playback starts automatically.
When a Sony CD changer equipped with a CTRL A1 jack is connected, the disc capacity shown on screen changes automatically in accordance with the capacity of the CD changer.



To Loçate a specific disc
Click SEARCH, the CD LIST - SEARCH screen appears.



- To display the discs in a certain group
  Click GROUP NAME, then click the name of the group in which the CD is located.
  The CD list for that group is displayed. Click the ↑ or ↓ icons to display disc , then click the disc. Playback starts automatically.
- To display the discs in alphabetical order
  Click ALPHABET, after a few seconds, discs are displayed in alphabetical order.
  Click the ↑ or ↓ icons to display disc , then click the disc. Playback starts automatically.
- To display the discs in numeric order
  Click DISC NUMBER, after a few seconds, discs are displayed in numeric order.
  Click the ↑ or ↓ icons to display disc, then click the disc. Playback starts automatically.

Notes

- Depending on the type of CD changer connected (3 or 5 disc changer, etc), you may not be able to select the CD even by clicking the disc name. In this case, select the CD from the normal CD control panel.
- If the CD changer is made by another manufacturer, and the sequence of operations required to start playback is other than; ① pressing a numeric button followed by ② pressing the disc button, then playback may not start when you click the disc name. In this case, return to the main menu, click SUB, and operate the CD changer according to its normal playback procedure.

Enjoying Two Components at the Same Time

Use the procedure below to play two program sources at the same time (for example, to play a laser disc while listening to a compact disc).
Make sure the AUTO PLAY function is set to off (see page 42).

1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

2 Click a video program source.
The control panel for the video program source appears.
Click ►.

3 Click on FUNCTION again, then click an audio program source.
The control panel for the audio program source appears.
Click ►.

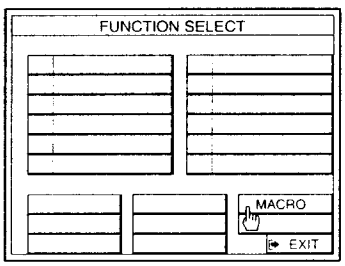
To stop play
Click the ■ button in each control panel.

Operating Several Components in Sequence Automatically (macro play)

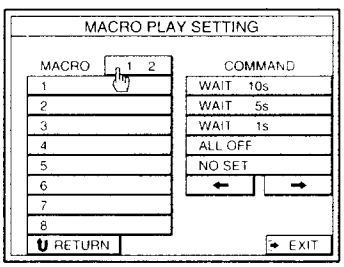
The macro functions (1 and 2) let you link up to eight IR command codes in sequential order for execution as a single command. You can specify the IR codes from both the preset and user IR code lists. The macros can then be executed either manually (by selecting them from the FUNCTION SELECT menu) or automatically (by specifying them in the AUTO START SETTING menu (see page 42)).

1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

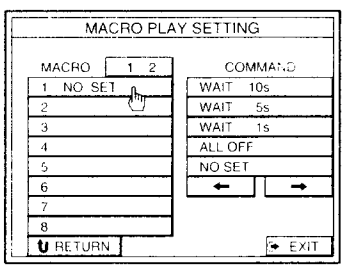
2 Click MACRO.
The MACRO PLAY SETTING menu appears.



3 Click MACRO 1 or 2.



4 Click macro step number 1.
This is the first IR code in the macro sequence.



5 Click ← or → to show the IR codes available for that button.
The IR codes recorded for the various components in the FUNCTION SELECT menu and the IR codes in the user IR menu set appear in groups of 5 at the right of the screen.

To specify a time lag between commands
Click ← or → repeatedly to display the time lag commands (WAIT 10s, WAIT 5s, and WAIT 1s).

To specify an IR code to turn off all the components
Click ← or → repeatedly to display ALL OFF.

Note
If the macro was selected for automatic execution at startup with the AUTO START function (see page 42), ALL OFF cannot be selected in that macro.

6 Click on the IR code you desire.
The name of the IR code appears in the highlighted macro step number and the next macro step number is highlighted.

7 Repeat steps 5 and 6 to enter up to eight IR codes.

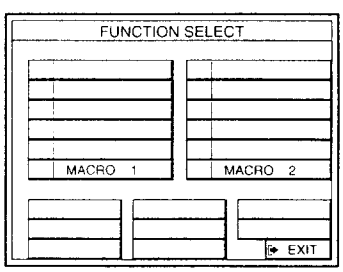
To erase an entered IR code
1 Click the code you want to erase so it will be highlighted.
2 Click ← or → repeatedly until NO SET appears at the right of the screen.
3 Click NO SET to erase the IR code highlighted in step 1.

To enter IR codes randomly
1 Click a numbered macro button.
2 Click ← or → repeatedly until the IR code you desire appears at the right of the screen.
3 Click the IR code.

To execute a macro

1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

2 Click MACRO 1 or MACRO 2.
Execution of the specified IR codes starts automatically.

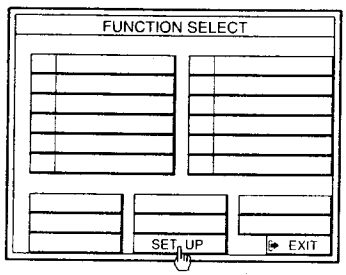


Remote Operation of Audio Sources Without the TV (illuminated control flasher)

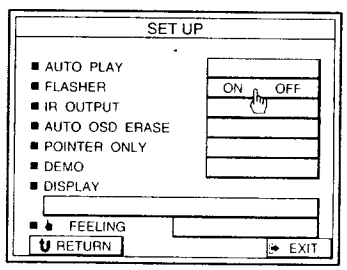
The Illuminated Control Flasher (or flasher) function allows you to control audio program sources without using the TV's on-screen display by using only the remote and the front panel of the receiver.
When you move the remote, the indicator lamps on the front panel light up in succession. These lamps, let you select and control the operations that appear in the display on the receiver.

1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

2 Click SET UP.

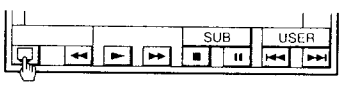


3 Click FLASHER ON.



4 Click an audio program source in the FUNCTION SELECT menu.

5 Click the TV off icon to turn off the TV monitor.



Note
The TV off icon for the flasher function only appears when you select audio program sources.

6 Move the remote from left to right.
Various operations for the selected program source appear in the display according to the movement of the remote. The indicator corresponding to the operation button on the front panel also lights up.
The operations available for each program source are shown below.

Program source	Operations
DAT/MD	⏮ ▶ ⏭ ■
CD	⏮ ▶ ⏭ ■
TUNER	PRESET– PRESET +
PHONO	No display
TAPE	◀◀ ▶ ▶▶ ■
All sources	INPUT SELECT, ALL OFF, TV ON, VOLUME –, VOLUME +, MUTE

7 Click the remote when the operation you want appears in the display.

To select another program source

1 Click the remote when INPUT SELECT appears in the display.
2 Move the remote commander from left to right.
The various program sources appear in the display one at a time. If you select a video program source, the TV set will turn on automatically.

To cancel the flasher function

Click the remote when TV ON appears in the display, or select a video component.

Note

If you select "ALL OFF" in the flasher mode, the next time the receiver is turned on it turns on in flasher mode. The receiver turns on normally, however, if there are components set to auto start (see page 42).

Playing Sources Automatically (auto play)

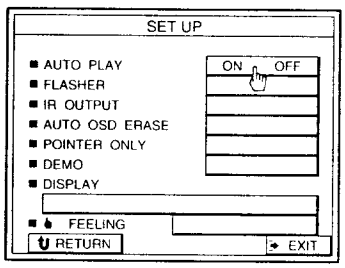
The AUTO PLAY function lets you set the receiver to start playing the program sources immediately after they are selected from the FUNCTION SELECT menu.

The receiver comes with AUTO PLAY set to ON.

1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

2 Click SET UP.

3 Click AUTO PLAY ON or OFF to select auto play on or off.



To return to the main menu
Click EXIT.

To go to the previous menu
Click RETURN.

Notes

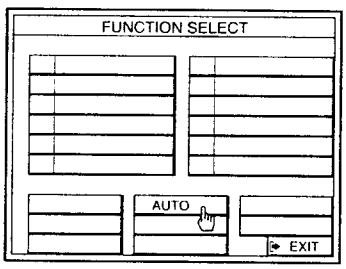
- If you select another component during playback, the current component stops and the newly selected component starts playing.
- The AUTO PLAY function does not work when you operate the receiver using the controls on the front panel.
- The AUTO PLAY function may not work for components with poor remote control response. If you experience this, reposition the IR repeater closer to that component to facilitate reception of the IR command codes.

Starting a Source Automatically at Power On (auto start)

The AUTO START function lets you set the receiver to start playing a specific program source immediately whenever you turn on the receiver.

1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

2 Click AUTO.
The AUTO START SETTING screen appears.



3 Click the component you want to start playing automatically when the receiver is turned on. Only one program source can be selected.

To automatically start the component played last the next time you turn on the receiver
Click LAST.

To execute a macro automatically when you turn on the receiver
Click MACRO 1 or MACRO 2 when the AUTO PLAY function is ON and the program source is specified in the MACRO PLAY setting (see page 40).
When LAST is specified, the program source last played will turn on automatically the next time you turn on the receiver.

To cancel the AUTO START function
Click NO SET in step 3.
AUTO START will not operate when you turn on the receiver.

To return to the main menu
Click EXIT.

To go to the previous menu
Click RETURN.

Note
Macros containing the ALL OFF command (see page 40) cannot be selected for use with the AUTO START function.

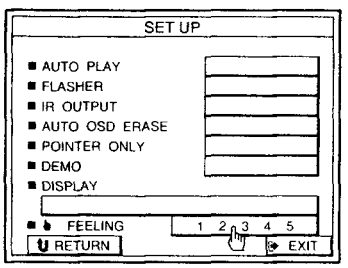
Adjusting the Sensitivity of the Remote

You can select from five different sensitivity levels that determine the speed at which the pointer moves.

1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

2 Click SET UP.

3 Click FEELING 1 through 5 to select the sensitivity level you desire.
The higher the number, the faster the speed.



To return to the main menu
Click EXIT.

To go to the previous menu
Click RETURN.

Note
If you find it difficult to change the remote commander sensitivity because the setting is too high (i.e., 5), turn off the unit, then turn it on while holding down the (FUNCTION) MODE, SOUND FIELD ON/OFF and EQ SLOPE buttons on the front panel.
The remote commander sensitivity will return to the factory-set value.

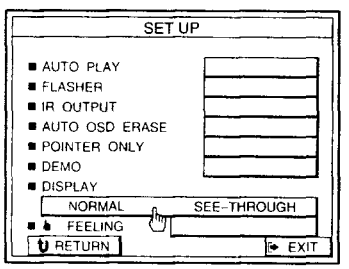
Selecting the Display Parameters

Use this procedure to select one of two display types: NORMAL or SEE-THROUGH, and one of three display modes: AUTO OSD ERASE, POINTER ONLY, or DEMO.
It also allows you to switch the IR OUTPUT setting when you use the IR repeater.

1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

2 Click SET UP.

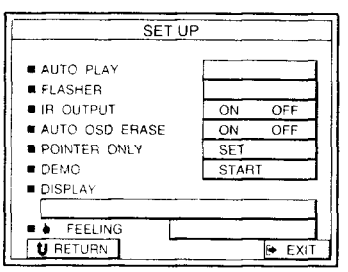
3 Click DISPLAY NORMAL or SEE-THROUGH to select the display type.



NORMAL: The display appears in the factory-set color.
SEE-THROUGH: All menus and control panels are transparent, with only characters and outlines visible, allowing you to see the contents of video and laser disc programs.

Note
Even if you have selected SEE-THROUGH, the display changes to NORMAL when there is no video signal being input. When a video signal is input, the display reverts to SEE-THROUGH.

4 Click AUTO OSD ERASE ON or OFF, POINTER ONLY SET or DEMO START to select the display mode as necessary.
If necessary, click IR OUTPUT ON or OFF.



(continued)

AUTO OSD ERASE:
This display mode is useful during laser disc operations since it allows you to see chapter numbers that otherwise might be hidden by the control panel.
When this mode is on, control panels disappear whenever you click and hold down a control button. When you release the button, the control panel reappears.

POINTER ONLY:
This display mode allows you to use the pointer to point to various on screen items, such as during a presentation (etc.).
When you click POINTER ONLY SET, the on-screen display disappears except for the pointer and an EXIT button. To freeze the pointer, hold down the button on the remote.

DEMO:
This display mode activates a program that explains the various functions of the receiver. Please note that when the program is running it replaces previously stored data (such as surround sound parameters) with data from the program. Therefore, you should only use the DEMO mode when no data has been stored or when rewriting existing data does not matter.
Click START to activate the program. To stop the program, click the button on the remote two or three times or turn off the receiver.

IR OUTPUT:
When it is set to OFF, the IR signals are only output from the IR OUT jack on the rear panel. No IR signals will be output from the IR repeater on the front panel. When the IR OUTPUT is set to OFF, "IR OFF" appears in the main menu.
Normally, IR OUTPUT should be set to ON.

To return to the main menu
Click EXIT.

To go to the previous menu
Click RETURN.

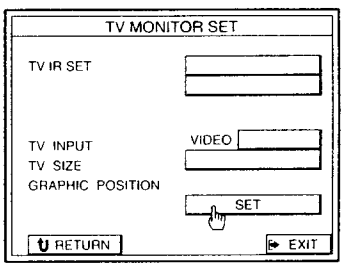
Adjusting the Position of the On-Screen Display

The graphic position function (GRAPHIC POSITION) lets you make fine adjustments to the overall position of the on-screen display control panel.

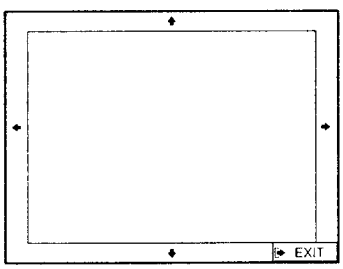
1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

2 Click TV SET.

3 Click GRAPHIC POSITION SET.
The position adjustment screen appears.



The position adjustment screen appears.



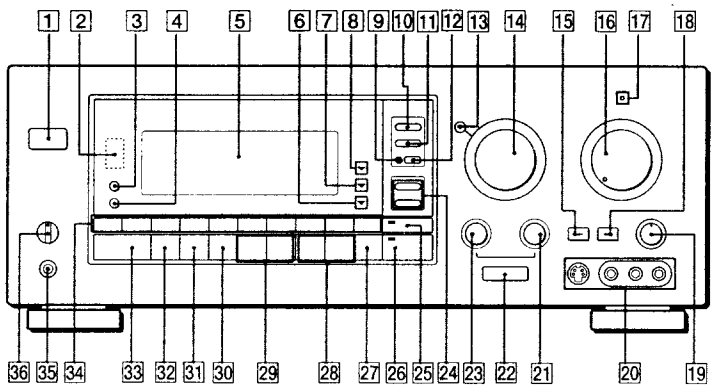
Click the boarders to adjust the position so you can just see the top, bottom, right and left edges of the boarder.

4 Click EXIT.

To return to the main menu
Click EXIT.

To go to the previous menu
Click RETURN.

Front Panel Descriptions



1 POWER switch
2 IR sensor
When recording IR codes from the remote controls of other components, point the remote's emitter at this area during operation.
3 DIMMER button
4 DISPLAY button
Switches the information displayed on the receiver.
5 Display
Shows the program source, function, and tuning frequency, etc.
6 INDEX indicator
7 EQUALIZER indicator
8 SURROUND indicator
9 CTR MODE (center mode) button
10 SOUND FIELD ON/OFF button
Turns the sound fields on or off.
11 SOUND FIELD GENRE button
12 SOUND FIELD MODE button
13 MODE button
14 FUNCTION knob
15 TAPE MONITOR button and indicator
For monitoring audio program sources during recording.
16 MASTER VOL knob
Adjusts the overall volume of all speakers.
17 MUTING indicator
18 5.1 INPUT button and indicator
29 BALANCE knob
20 VIDEO 3 input terminals
For connecting camcorders or video game units, etc.
21 DIGITAL PROCESSING CONTROL: LEVEL/EQ LEVEL/ CHARACTER knob
22 DPC MODE button
23 DIGITAL PROCESSING CONTROL: PARAMETER/FREQUENCY/ POSITION knob
24 EQUALIZER BAND and SLOPE buttons
24 BASS BOOST button
26 DIRECT PASS button
27 MEMORY button
28 PRESET (+/–) buttons
For selecting preset stations.
29 INDEX (+/–) buttons
For selecting station indexes, tunes non-preset stations.
30 FM MODE button
31 DIRECT TUNING button
32 FM/AM button
33 SHIFT button
34 Number buttons
35 PHONES jack
For connecting stereo headphones.
36 SPEAKERS selector
For selecting speakers A, B, A+B, or OFF.

Selecting a Component

1 Press POWER to turn on the receiver.

2 Turn FUNCTION to select the component you want to use:

To listen to or watch	Select
Video tapes	VIDEO 1, VIDEO 2 or VIDEO 3
Laser discs	LD
TV programs or DBS	TV/DBS
Digital Audio Tapes (DAT) or MiniDiscs (MD)	DAT/MD
Compact Discs (CD)	CD
Radio programs	TUNER
Records	PHONO

To listen to analog audio cassettes
Press TAPE MONITOR, the button's indicator lights up and "TAPE" appears in the display.

To listen to decoded Dolby Digital AC-3 program sources
Select a visual source (TV, LD, VIDEO 1, VIDEO 2, or VIDEO 3) then press 5.1 INPUT, the indicator on the button lights up. The 5.1 INPUT on or off settings are stored separately for each visual source.

3 Turn on the component, for example, a CD player, and start playback.

4 Turn MASTER VOL to adjust the volume.

To	Do This
Reinforce the bass	Press BASS BOOST to turn on the BASS BOOST indicator.
Adjust the balance	Turn the BALANCE control to the left (L) or right (R).

When you listen with headphones
Connect the headphones to the PHONES jack and set the SPEAKERS selector to OFF.

When you want to enjoy high quality sound
Press DIRECT PASS to bypass the equalizer, bass reinforcement, and surround effects.
The indicator on the button lights up.

When you want to adjust the brightness of the display
Press DIMMER repeatedly to select the brightness you desire.

For the on-screen operations, see page 23.

Receiving Broadcasts

Receiving broadcasts by entering the station number (direct tuning)

1 Press POWER to turn on the receiver.

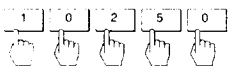
2 Turn FUNCTION to select "TUNER".
The last received station is tuned in.

3 Press FM/AM to select FM or AM stations.

4 Press DIRECT TUNING.

5 Press the numeric buttons to enter the frequency.

Example 1:FM 102.50 MHz



Example 2:AM 1350kHz
(You don't have to enter the last "0.")

(With 10 kHz steps only)

6 When you tune in AM stations, adjust the direction of the AM loop antenna for optimum reception.

To receive other stations
Repeat Steps 3 through 5.

If an FM stereo program is distorted
The STEREO indicator flashes. Press FM MODE to change to monaural (MONO) reception. You will not have the stereo effect but the distortion will be reduced. To return to the auto stereo mode, press this button again.

If the STEREO indicator on the receiver remains off
Press FM MODE even when an FM stereo broadcast is received.

If you cannot tune in a station and the entered numbers are flashing
Make sure you've entered the right frequency. If not, re-enter the frequency you want.
If the entered numbers still flash, the frequency is not used in your area.

(continued)

If you enter a frequency not covered by the tuning interval

The entered value is automatically rounded up or down to the closest covered value.
Tuning intervals for direct tuning are:
FM: 50 kHz intervals
AM: 10 kHz intervals (to change to 9 kHz intervals, see page 54)

For the on-screen operations, see page 25

Receiving broadcasts by scanning stations (automatic tuning)

1 Select TUNER.
The last received station is tuned in.

2 Press DISPLAY so that the frequency appears in the display.

3 Press FM / AM to select FM or AM.

4 Press INDEX + or –.
Press the + button for a higher station number; press the – button for a lower one. When you tune past either end of the band, the receiver automatically jumps to the opposite end and continues scanning in the same direction. Every time a station is received, the receiver stops scanning. To continue scanning, press the button again.

For the on-screen operations, see page 25.

Presetting

1 Turn FUNCTION to select "TUNER".
The last received station is tuned in.

2 Tune in the station you want.

3 Press MEMORY.
"MEMORY" appears for a few seconds.
Do steps 4 and 5 before "MEMORY" goes out.

4 Press SHIFT to select a memory page (A, B or C).
Each time you press SHIFT, the letter "A", "B" or "C" appear in the display.

5 Press the number you want to use (0 to 9).

If "MEMORY" goes out before you specify the preset number, start again from step 3.

6 Repeat steps 2 to 5 to preset other stations.

To change a preset station

Preset a new station on the number you want to change.

Note

If the AC power cord is disconnected for about one week, the preset stations will be cleared from the receiver's memory, and you will have to preset the stations again.

For the on-screen operations, see page 26.

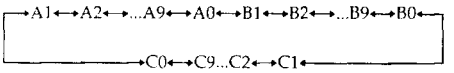
Tuning preset stations (preset tuning)

1 Select TUNER.
The last received station is tuned in.

2 Press SHIFT to select a memory page (A, B or C), then press the number.
For example, select A and then press 7 to tune in the station preset as A7.

You can also tune by scanning the preset stations

Press TUNER and then DISPLAY so that the frequency display appears. Then press PRESET + or – to select the station you want. Each time you press the buttons, the preset numbers change as follows:



For the on-screen operations, see page 26.

Recording

1 Turn FUNCTION to select the program source to be recorded.

2 Set the component to be ready for playing.
For example, insert a CD into the CD player.

3 Insert a blank tape into the recording deck (or VCR, etc.) and adjust the recording level, if necessary.

4 Start recording on the recording deck and then start playing the component.

You can monitor the sound being recorded

If you connected a 3-head tape deck to the TAPE MONITOR jacks, press TAPE MONITOR. "TAPE" appears in the display and you can hear the sound being recorded.

(continued)

Note
Sound input through the 5.1 INPUT connectors on the rear panel cannot be recorded on a recording unit.

For the on-screen operations, see page 27.

Replacing audio while copying a video tape or laser disc

1 Turn FUNCTION to select the video program source to be recorded.
2 Press MODE repeatedly so that "AUDIO MODE" appears in the display.
The current video signal is fixed and you can select audio from any other source (except 5.1 INPUT) without changing the current video signal.
3 Use FUNCTION to select the audio you desire.
If you want to change the video program selected in step 1, press MODE to select "VISUAL MODE" and you can select video from another source while maintaining the current audio signal.
4 Prepare the respective video and audio sources for playback.
5 Insert a blank video tape into the recording VCR.
6 Start recording on the recording VCR and then start playing both the video and audio sources you want to record.

Note
If you do not select the audio or video source within 8 seconds of pressing MODE, the "AUDIO MODE" or "VISUAL MODE" is cancelled and the audio or video source will not be fixed. In this case, press MODE again to display the mode you desire. The mode changes as follows: VISUAL MODE → AUDIO MODE → off

To record other audio on a specific part of video

1 Pause the video the point where you want to record the other audio.
2 Press MODE to select "AUDIO MODE", then use FUNCTION to select the audio source you desire.
3 Start recording on the recording VCR, release the pause mode and start playing the audio source you want to record.
To resume recording the sound of the original playback source, press the SYSTEM CONTROL / FUNCTION button on the remote for that component.

Using Sound Fields

Selecting a Pre-Programmed Sound Field

1 Press GENRE repeatedly to select the type of sound field you desire.

2 Press MODE to select the mode you desire from the respective genre.

To turn off the sound fields
Press SOUND FIELD ON/OFF.

For the on-screen operations, see page 29.

Getting the most out of Dolby Pro Logic surround

You can also select the center mode, adjust the speaker volume and adjust the delay time using the controls on the front of the receiver.

Selecting the center mode

1 Press GENRE to select the PRO LOGIC sound field.
2 Press CTR MODE repeatedly until the center mode you want appears in the display.

Adjusting the speaker volume

1 Start playing a program source encoded with Dolby surround sound.
2 Press DPC MODE repeatedly until the SURROUND indicator lights up.
3 Rotate the PARAMETER knob to select CENTER or REAR. The current level appears in the display.
4 Rotate the LEVEL knob to adjust the respective level.

Adjusting the delay time

1 Start playing a program source encoded with Dolby surround sound.
2 Press DPC MODE repeatedly until the SUR indicator lights up.
3 Rotate the PARAMETER knob to select DELAY TIME. The current delay time appears in the display.
4 Rotate the LEVEL knob to adjust the delay time.

For the on-screen operations, see pages 31 and 32.

Adjusting the equalizer

1 Start playing a program source, then press SOUND FIELD ON/OFF so the name of the previously selected sound field appears in the display.
2 Press DPC MODE so that the "EQUALIZER" indicator lights up.
3 Press SLOPE to select the type of adjustment you want: NARROW (to adjust a specific frequency), MEDIUM (to a small group of frequencies), or WIDE (to adjust a broad range of frequencies).
4 Press EQUALIZER BAND to select a frequency band: B (bass), M (midrange), or T (treble).
5 Rotate the FREQUENCY digital processing control knob to select the frequency you want to adjust.
6 Use the EQ LEVEL digital processing control knob to raise or lower the level of the selected frequency.
7 Repeat steps 3 through 6 for other frequency bands until you obtain the equalization curve you desire.

For the on-screen operations, see page 33.

Adjusting the surround sound parameters

1 Press DPC MODE repeatedly until the SURROUND indicator lights up.
2 Use the PARAMETER digital processing control knob to select the parameter you want.
3 Use the LEVEL digital processing control knob to adjust the level of the parameter.
The adjusted parameters are stored automatically.

For the on-screen operations, see page 34.

Indexing

You can index preset stations and then use the index names to scan specific stations in the preset memory. You can also use the index feature to label program sources so that the receiver displays the names of the components you connected, for example, "VHS".

Indexing preset stations

This receiver includes a feature that lets you group preset stations by name (station index) using up to 8 characters.
For example, if you label all of your preset jazz stations "JAZZ," selecting "JAZZ" lets you skip other presets and scan only the stations labeled "JAZZ." Note that you cannot assign more than one station index name to each preset station.

1 Select TUNER.
The last station you received is tuned in.

2 Press PRESET + or – to tune in a preset station.

3 Press DPC MODE repeatedly until the INDEX indicator lights up.

4 Create a station index name by using the DIGITAL PROCESSING CONTROL knobs as follows:
Turn CHARACTER to select a character.
Then turn POSITION to move the cursor to the next position.
To insert a space, turn CHARACTER until a blank space appears in the display, the space is between " and A.
The station index is stored automatically.

If you've made a mistake
Turn POSITION until the character you want to change flashes. Then select the right character.

5 Repeat Steps 2 to 4 to assign index names to other stations.

You can display either the index name or frequency
Each time you press DISPLAY, the display switches between the frequency and the index name.

For the on-screen operations, see page 36.

(continued)

Scanning indexed stations (index tuning)

Once you select a station index, you can scan all the stations with that station index.

1 Select TUNER.
The last station you received is tuned in.

2 Press DISPLAY so that the index mode appears in the display.
The station index for the last station you received appears in the display.

If "_ _ _ _" appears
The station does not have an station index.

3 Press INDEX + or – to select the station index you want to scan.

4 Press PRESET + or – to select the station you want receive.

To select a different station index
Press INDEX + or – to select the one you want, then press PRESET + or – to select a station.

Indexing program sources

1 Select the FUNCTION you want to label.

2 Press DPC MODE repeatedly until the INDEX indicator lights up.

3 Create an index name by using the DIGITAL PROCESSING CONTROL knobs as follows:
Turn CHARACTER to select a character, then turn POSITION to move the cursor to the next position.
To insert a space, turn CHARACTER until a blank space appears in the display; the space is between " and A.
The index is stored automatically.

If you've made a mistake
Turn POSITION until the character you want to change flashes. Then select the right character.

You can display either the index or function name
Each time you press DISPLAY, the display switches between the function name and the index name.

For the on-screen operations, see page 36.

Enjoying Two Components at the Same Time

1 Turn FUNCTION to select the video program source.

2 Press MODE repeatedly so that "AUDIO MODE" appears in the display.
The current video signal is fixed and you can select audio from any other source (except 5.1 INPUT) without changing the current video signal.

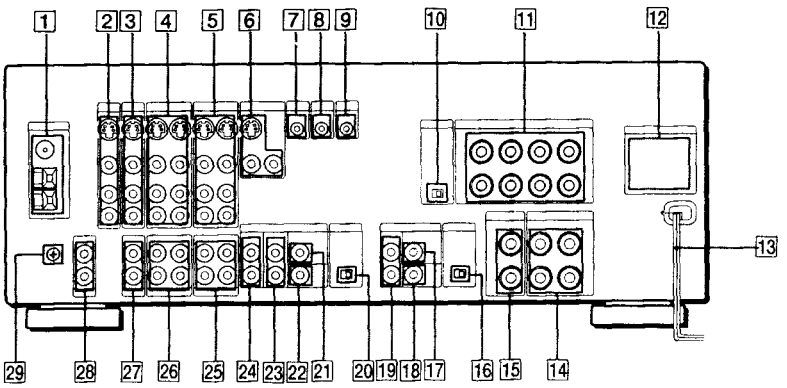
3 Use FUNCTION (or TAPE MONITOR) to select the audio you desire.
If you want to change the video program selected in step 1, press MODE to select "VISUAL MODE" and you can select video from another source while maintaining the current audio signal.

4 Start playing the respective video and audio sources.

Note
If you do not select the audio or video source within 8 seconds of pressing MODE, the "AUDIO MODE" or "VISUAL MODE" is cancelled and the audio or video source will not be fixed. In this case, press MODE again to display the mode you desire. The mode changes as follows:
VISUAL MODE ➡ AUDIO MODE ➡ off

For the on-screen operations, see page 39.

Rear Panel Descriptions



1 ANTENNA (AM/FM)
2 TV
3 LD
4 VIDEO 2
5 VIDEO 1
6 MONITOR
7 RC ANT
8 IR OUT
9 S-LINK (CONTROL-A1 IN)
10 IMPEDANCE SELECTOR (See page 11)
11 FRONT SPEAKERS (A+B)
12 SWITCHED AC OUTLET(s) (Outlet shape and position varies according to destination)
13 AC power cord
14 REAR SPEAKERS
15 CENTER SPEAKER
16 POWER SWAP (See page 11)
17 SURROUND OUT (CENTER)
18 SURROUND OUT (WOOFER)
19 SURROUND OUT (REAR)
20 LOW FILTER (See page 11)
21 5.1 INPUT (CENTER)
22 5.1 INPUT (WOOFER)
23 5.1 INPUT (REAR)
24 5.1 INPUT (FRONT)
25 TAPE
26 DAT/MD
27 CD
28 PHONO
29 ⏚ SIGNAL GND terminal

Troubleshooting

If you experience any of the following difficulties while using the receiver, use this troubleshooting guide to help you remedy the problem. Should any problem persist, consult your nearest Sony dealer.

The TV set turns off when you turn on the receiver with the remote.

➡ Make sure that the TV set is off when you turn on the receiver with the remote.

When you select a program source from the FUNCTION SELECT menu, the selected program source turns off.

➡ The program source was turned on by a different remote. The program source needs to be turned on by the receiver or manually.

Some equipment does not turn off when you click on the ALL OFF button.

➡ The equipment was turned on by another remote commander. Turn off the equipment manually.

There's no sound or only a very low-level sound is heard.

➡ Check that the speakers and components are connected securely.
➡ Make sure you selected the correct component.
➡ Make sure you set the SPEAKERS selector to the appropriate position.
➡ Make sure the POWER SWAP selector is set to the correct position (see page 11).
➡ Click the [icon] icon if the MUTING indicator turns on.
➡ The protective device on the receiver has been activated because of a short circuit. ("PROTECTOR" flashes.) Turn off the receiver, eliminate the short-circuit problem and turn on the power again.

The left and right sounds are unbalanced or reversed.

➡ Check that the speakers and components are connected correctly and securely.
➡ Adjust the BALANCE control.

Severe hum or noise is heard.

➡ Check that the speakers and components are connected securely.
➡ Check that the connecting cords are away from a transformer or motor, and at least 10 feet (3 meters) away from a TV set or fluorescent light.
➡ Place your TV away from the audio components.
➡ Make sure you connect a ground wire to the antenna ground terminal.
➡ The plugs and jacks are dirty. Wipe them with a cloth slightly moistened with alcohol.

No sound is heard from the center speaker.

➡ Select a PRO LOGIC, MOVIE (except Mono movie), or LIVE HOUSE sound field (see page 29 or 48).
➡ Select the appropriate center mode (see page 31 or 48).
➡ Adjust the speaker volume appropriately (see page 32 or 48).

Recording cannot be made.

➡ Check that the components are connected correctly.
➡ Select the source component from the FUNCTION SELECT menu or with the function buttons.

No sound or only a very low-level sound is heard from the rear speakers.

➡ Turn on the sound field function.
➡ Select the appropriate center mode (see page 31 or 48).
➡ Adjust the speaker volume appropriately (see page 32 or 48).

Radio stations cannot be tuned in.

➡ Check that the antennas are connected securely. Adjust the antennas and connect an external antenna if necessary.
➡ The signal strength of the stations is too weak (when you tune in with automatic tuning). Use direct tuning.
➡ Make sure you set the tuning interval correctly (when you tune in AM stations with automatic tuning) (see page 25 or 47 and 54).
➡ No stations have been preset or the preset stations have been cleared (when you tune in with scanning preset stations). Preset the stations (see page 26 or 47).
➡ Make sure to set the display mode to "NORMAL MODE" (when you tune with automatic tuning).

Surround effect cannot be obtained.

- ➡ Turn on the sound field function.
- ➡ Make sure that the SPEAKERS selector is set to the appropriate position (see page 11).

No picture or an unclear picture is seen on the TV screen.

- ➡ Select the appropriate function on the receiver.
- ➡ Set your TV to the appropriate input mode.
- ➡ Place your TV away from the audio components.

The on-screen display disappears while you are using the commander.

- ➡ Check that the RC antenna is connected securely and properly.
- ➡ Make sure there are no metal objects near the RC antenna.
- ➡ Make sure the remote is not too far from the RC antenna.

You have difficulty operating the unit because the on-screen display is distorted.

- ➡ Make sure that video components are not connected to both the S-VIDEO and VIDEO jacks at the same time. Use only the S-VIDEO connectors, or the VIDEO connectors (if there are no S-VIDEO connectors on the TV).
- ➡ When connect two or more VCRs to the unit, make sure to use a distributor when connecting the TV antenna to the VCRs to preserve video signal quality.
- ➡ Clean the head of the VCR.
- ➡ Do not select channels where there is no broadcast. Set the unit to skip channels where there is no broadcast.

The on-screen display becomes distorted when you select a program source from the FUNCTION SELECT menu.

- ➡ There may be distortion in the video signal, but this is not a malfunction, continue as is.

The pointer on the on-screen display moves even when the remote is stationary.

- ➡ The remote may be out of calibration. Rest the remote on a flat surface, then try using it again after the on-screen display disappears.

The remote does not function.

- ➡ Replace both batteries in the remote with new ones if they are weak.
- ➡ Connect the RC antenna to the RC ANT jack on the rear of the receiver (see page 8).
- ➡ Remove the obstacles in the path of the remote and the RC antenna.
- ➡ Make sure both the remote and receiver are set to the same security number (see page 14).

IR codes of non-Sony equipment cannot be recorded.

- ➡ Be sure that the respective remote is pointed directly at the infrared sensor on the front of the receiver from a distance of less than 4 inches (10 cm).
- ➡ There may be interference from a fluorescent light source. Keep the infrared sensor away from fluorescent light.

Specifications

Audio power specifications

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

With 8-ohm load, both channels driven, from 20 - 20,000 Hz, rated 120 watts per channel, minimum RMS power, with no more than 0.05 % total harmonic distortion from 250 milliwatts to rated output (USA model only).

Amplifier section

POWER OUTPUT

Stereo mode 8 ohms 20 Hz - 20 kHz, 120 W + 120 W

Surround mode 8 ohms at 1 kHz, THD 0.8 %

Terminals	Output
Front	120 W/ch
Center	120 W
Rear	50 W/ch

Dynamic power output 165 W + 165 W, 8 ohms
250 W + 250 W, 4 ohms

Harmonic distortion at rated output Less than 0.05 % (Direct Pass)

Frequency response PHONO: RIAA equalization curve ±0.5 dB
CD, TAPE, DAT/MD, TV, LD, VIDEO 1, 2,: 10 Hz - 50 kHz $^{+1}_{-3}$ dB (Direct Pass)

Inputs

	Sensitivity	Impedance	S/N*
PHONO (MM)	2.5 mV	50 kilohms	75 dB* (A, 2.5 mV)
CD,TAPE, DAT/MD, VIDEO 1, 2, 3, TV, LD	150 mV	50 kilohms	82 dB* (A, 250 mV)

* '78 IHF

Outputs REC OUT VIDEO 1, 2 (AUDIO) OUT:
Voltage 150 mV,
Impedance 10 kilohms
WOOFER OUT
Voltage: 2 V
Impedance: 1 kilohms
PHONES: Accepts low and high impedance headphones

BASS BOOST +7 dB at 70 Hz

Digital signal processor section

Modulation (A/D conversion) High Density Linear Converter

Demodulation (D/A conversion) High density Linear Converter (Pulse D/A converter)

Sampling frequency 48 kHz

Surround ROOM SIZE
16-step adjustable
WALL TYPE
16-step adjustable
SEAT F/R and L/R
16-step adjustable
EFFECT
20-step
REVERB TIME
16-step adjustable
DELAY TIME
In PRO LOGIC mode:
15.0 ms - 30.0 ms, 0.1 ms step
REAR LEVEL
−50 dB - +10 dB, 1 dB step
CENTER LEVEL*
−50 dB - +10 dB, 1 dB step
Input balance: Automatic

* Only for sound fields with a CENTER LEVEL parameter (see page 35).

Equalizer Band
3-band, Bass/Mid/Treble
Turnover frequency
Bass: 125 Hz - 1 kHz
Treble: 1 kHz - 8 kHz
Center frequency
Mid: 435 Hz - 8 kHz
Level
±10 dB, 1 dB step
Slope (Q)
3-step selectable, Wide, Mid, Narrow

FM tuner section

Tuning range 87.5 - 108.0 MHz

Antenna terminals 75 ohms, unbalanced

Sensitivity Mono: 18.3 dBf, 4.5 μV
Stereo: 38.3 dBf, 45 μV

Usable sensitivity 11.2 dBf, 2 μV (IHF)

S/N Mono: 76 dB
Stereo: 70 dB

Harmonic distortion at 1 kHz Mono: 0.3 %
Stereo: 0.5 %

Separation 45 dB at 1 kHz

Frequency response 30 Hz - 15 kHz $^{+0.5}_{-2}$ dB

Selectivity 60 dB at 400 kHz

AM tuner section

Tuning range With 10 kHz interval*:
530 - 1710 kHz
With 9 kHz interval:
531 - 1710 kHz

Antenna Loop antenna

Usable sensitivity 50 dB/m (at 1,000 kHz or 999 kHz)

S/N 54 dB (at 50 mV/m)

Harmonic distortion 0.5 % (50 mV/m, 400 kHz)

Selectivity At 9 kHz: 35 dB
At 10 kHz: 40 dB

* You can change the AM tuning interval between 9 kHz and 10 kHz. After tuning in any AM station, turn off the receiver. Hold down the PRESET + button and press the POWER button. All preset stations will be erased when you change the interval. To reset the interval, repeat the procedure.

Video section

Inputs	VIDEO 1, 2, TV: 1 Vp-p 75 ohms
Outputs	VIDEO 1, 2, MONITOR: 1 Vp-p 75 ohms

General

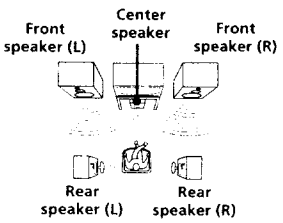
System	Tuner section: PLL quartz-locked digital synthesizer system Preamplifier section: Low-noise NF type equalizer Power amplifier section: Pure-complimentary SEPP
Power requirements	120 V AC, 60 Hz
Power consumption	USA model: 330 W Canada model: 470 VA
AC outlets	2 switched, total 120 W
Dimensions	17 x 6 3/8 x 16 1/4 inches (430 x 160 x 425 mm)
Mass (Approx.)	14.8 kg (32 lb 10 oz)
Supplied accessories	FM wire antenna (1) AM loop antenna (1) Remote commander RM-VP1 (remote) (1) Size AA (R6) batteries (2) RC antenna (1) IR repeater (1) Getting Started and Basic Operation Guide (1)

Design and specifications are subject to change without notice.

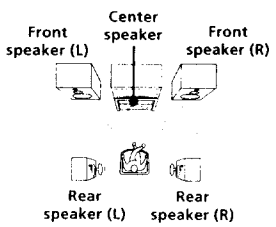
Glossary

Center mode
Setting of speakers to enhance Dolby Pro Logic Surround mode. To obtain the best possible surround sound, select one of the following four center modes according to your speaker system.

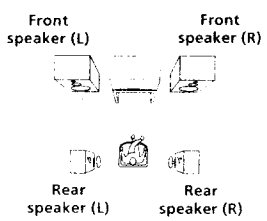
- **NORMAL mode**
  Select NORMAL mode if you have front and rear speakers and a small center speaker. Since a small speaker cannot produce enough bass, the bass sound of the center channel is output from the front speakers.



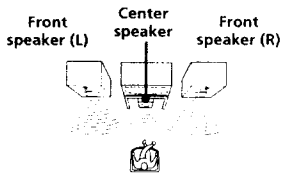
- **WIDE mode**
  Select WIDE mode if you have front and rear speakers and a large center speaker. With the WIDE mode, you can take full advantage of Dolby Surround sound.



- **PHANTOM mode**
  Select PHANTOM mode if you have front and rear speakers but no center speaker. The sound of the center channel is output from the front speakers.



- **3 CH LOGIC mode**
  Select 3 CH LOGIC mode if you have front and center speakers but no rear speaker. The sound of the rear channel is output from the front speakers to let you experience some of the surround sound without using rear speakers.



Delay time
Time lag between the surround sound output from front speakers and rear speakers. By adjusting the delay time of the rear speakers, you can obtain the feeling of presence. Make the delay time longer when you have placed the rear speakers in a small room or close to your listening position, and make it shorter when you have placed them in a large room or apart from your listening position.

Direct tuning
Tuning method to let you directly enter a station's frequency using the numeric buttons. Use this method if you know the frequency of the station you want.

Dolby Pro Logic Surround
Decoding system of Dolby Surround sound standardized in TV programs and movies. Compared with the former Dolby Surround system, Dolby Pro Logic Surround improves sound image by using four separate channels: off-screen audio effects, on-screen dialog, left-to-right panning, and music. These channels manipulate the sound to be heard and enhance the action as it happens on the screen. To take advantage of Dolby Pro Logic, you should have at least one pair of rear speakers and/or one center speaker. You also need to select the appropriate center mode to enjoy a full effect.

Dolby Surround
Encoding and decoding system of Dolby Surround sound for consumer use. Dolby Surround decodes the extra channels on the Dolby Surround-encoded sound tracks of movie videos and TV programs and produces sound effects and echoes that make the action seem to envelop you.

The receiver offers Dolby Surround (PRO LOGIC) as one of the pre-programmed sound fields. If you have rear or center speaker(s), we recommend that you customize the Dolby Surround sound field by selecting the appropriate center mode to take advantage of Dolby Pro Logic Surround sound.

Effect level
Combination of the level of early reflections and reverberation. You can adjust the effect level in 6 levels. As you select higher levels, the room becomes "live," and as you select lower levels, the room becomes "dead."

Additional Information

Memory page
Internal memory to store preset radio stations. This receiver provides 3 "pages" (A, B, and C). Each memory page lets you store 10 FM or AM stations; therefore, you can store a total of 30 stations.

Parameter
Variable of sound that composes sound image, such as tone or delay time. You can customize the pre-programmed sound fields by adjusting parameters to suit your listening situation.

Preset station
A radio broadcasting station that is stored in memory of the receiver. Once you "preset" stations, you no longer have to tune in the stations. Each preset station is assigned its own preset number, which lets you tune them in quickly.

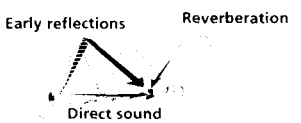
Programmable remote
Remote control with "learning" capability. You can control not only Sony components but non-Sony components by programming the control signals of these components.

Sound field
Sound pattern produced by a sounding source or sources in a given environment due to direct and reflected sounds and the acoustics of the environment. The receiver offers pre-programmed sound fields like, DOLBY SUR, THEATER, and HALL (etc.) to let you enjoy surround sound easily.

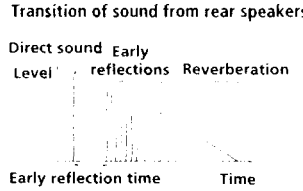
Station index
Index name given to preset radio stations. You can group preset stations by assigning the same station index to them.

Surround sound
Sound that consists of three elements: direct sound, early reflected sound (early reflections) and reverberative sound (reverberation). The acoustics where you hear the sound affect the way these three sound elements are heard. These sound elements are combined in such a way that you can actually feel the size and the type of a concert hall.

- **Types of sound**

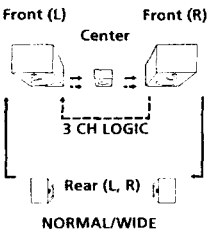


- **Transition of sound from rear speakers**

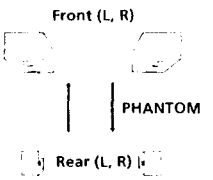


Test tone
Signal given out by the receiver for adjusting the speaker volume. The test tone will come out as follows:

- **In a system with a center speaker (NORMAL/WIDE/3 CH LOGIC modes)**
The test tone is output from the front L *(left), center, front R (right), and rear* speakers in succession.



- **In a system without a center speaker (PHANTOM mode)**
The test tone is output from the front and the rear speakers alternately.



Index

A, B

Adjusting
- delay time 32, 48
- equalizer 33, 49
- on-screen display 43, 44
- parameter 34, 49
- sensitivity of remote 43
- speaker volume 32, 48
- volume 23, 46

Antenna hookups
- AM/FM 9
- RC 8

Audio component hookups 9
Automatic play 42
Automatic start 42
Automatic tuning 25, 47

C

Center mode 31, 48, 55
- NORMAL mode 31, 48, 55
- PHANTOM mode 31, 48, 55
- 3 CH LOGIC mode 31, 48, 55
- WIDE mode 31, 48, 55

CD changer operation 38
Connecting. *See* Hookups
Customizing sound fields 33, 49

D

Decoded Dolby Digital AC-3 programs 23, 46
Delay time 32, 48, 55
Dimming the display 46
Direct tuning 25, 46
Dolby Pro Logic
- getting the most out of 31, 48
- Surround 55

Dolby Surround sound 31, 48, 55
- center mode 31, 48, 55

Dubbing. *See* Recording

E

Editing. *See* Recording
Effect level 33, 35, 55

F

Front panel 45

G

Grouping CDs 38

H

Hookups
- AC power cord 13
- AM/FM antennas 9
- audio components 9
- IR repeater 8
- overview 7
- RC antenna 8
- speakers 10
- TV/VCRs 12

I, J, K

Indexing
- CDs 37
- preset stations 36
- program sources 36
- using the controls on the front panel 50

IR repeater 6, 8

L

Labeling. *See* Indexing

M

Macro operations 40
Memory page 26, 47

N, O

Naming. *See* Indexing
NORMAL mode 31, 48, 55

P

Parameter 35, 56
PHANTOM mode 31, 48, 55
Preset station 56
Presetting
- radio stations 26, 47

Preset tuning 26, 47
Program source
- indexing 36, 50
- selecting 23, 46

Programming IR codes 16, 18, 21
- clearing the signal 17, 20, 22

Q, R

Rear panel 8-13, 51
Receiving broadcasts
- by scanning indexed stations 50
- directly 25, 46
- using preset stations 26, 47
- using the controls on the front panel 46

Recording 27
- using the controls on the front panel 46

Remote 14-22, 41, 43
- controlling non-Sony components 16, 18, 21
- controlling Sony components 16, 18
- inserting batteries 14
- operations without TV 41
- security code 14
- sensitivity 45
- usage 15

S

Scanning
- CD list 39
- preset stations 26, 47
- radio stations 25, 47

Searching for a CD 39
Selecting a program source 23
- using the controls on the front panel 46

Sleep timer 28
Sound field
- adjustable parameters 35
- customizing 33, 49
- pre-programmed 29, 48

Speakers
- connection 10
- impedance 11
- placement 10
- selecting the speaker system 11

Station index 49
Storing radio stations. *See* Presetting
Surround sound 56

T

Test tone 32, 48, 56
3 CH LOGIC mode 31, 48, 55
Troubleshooting 52
Tuning. *See* Receiving broadcasts
TV/VCR hookups 12

U, V

Unpacking 7

W, X, Y, Z

Watching video programs 24
WIDE mode 31, 48, 55